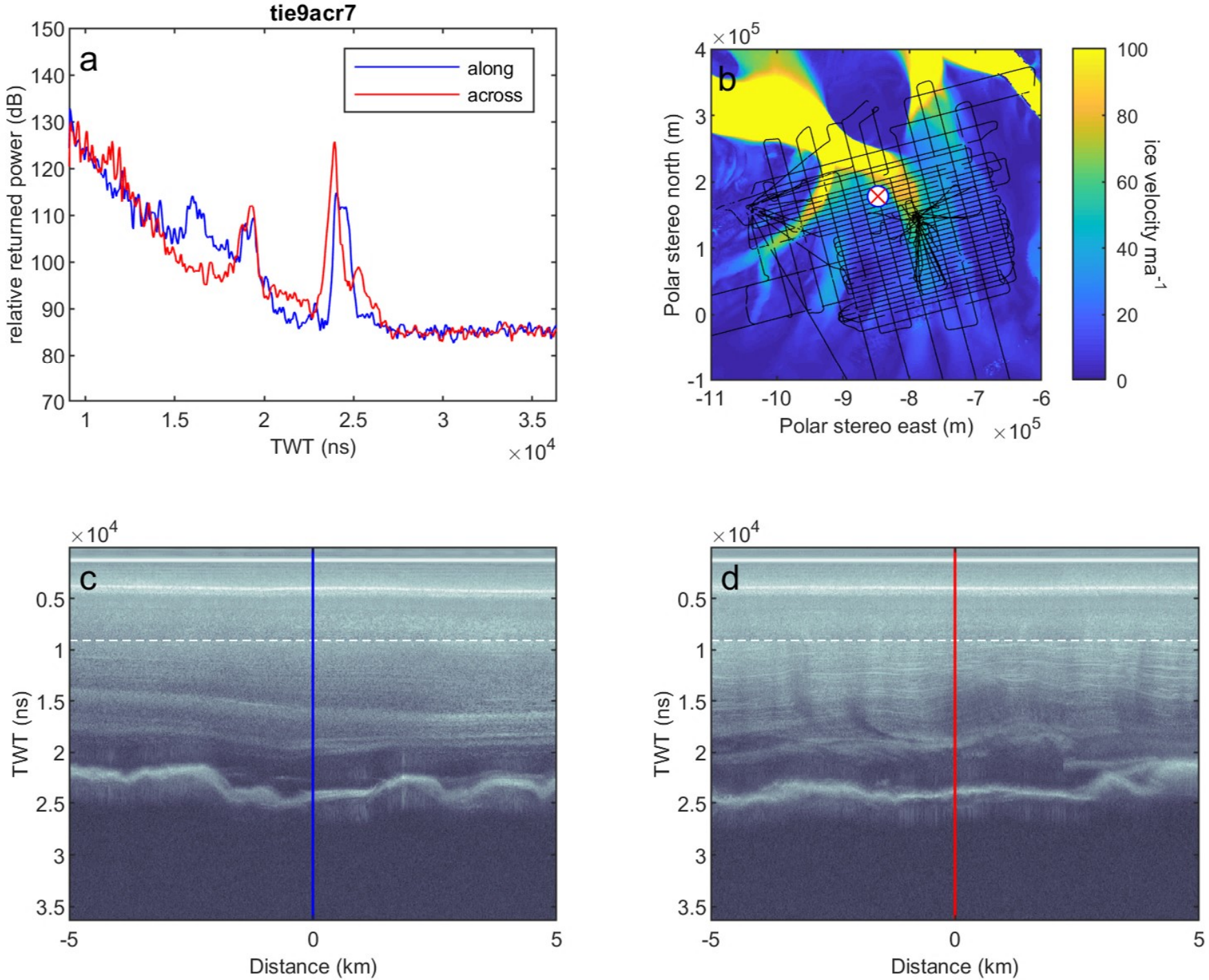
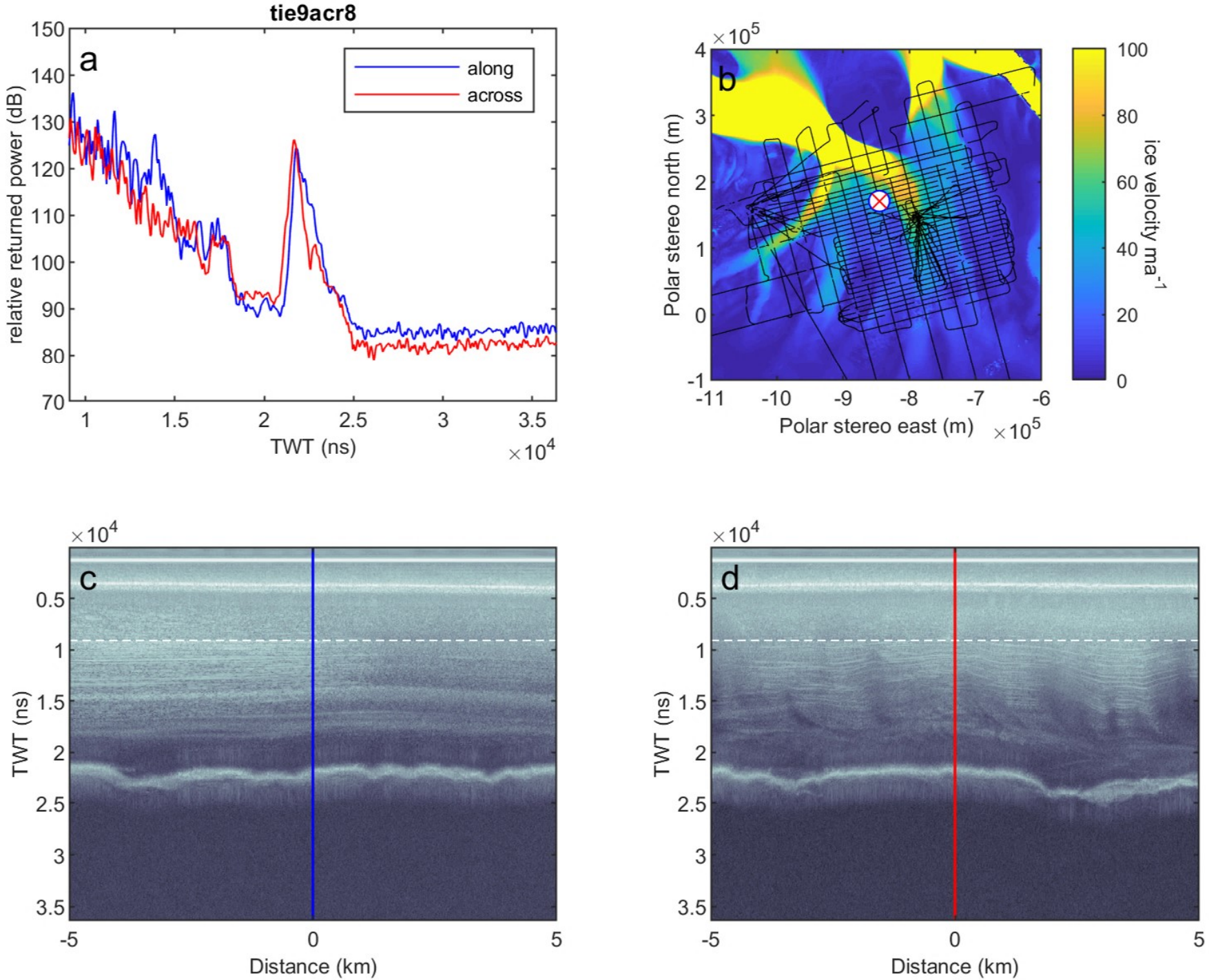
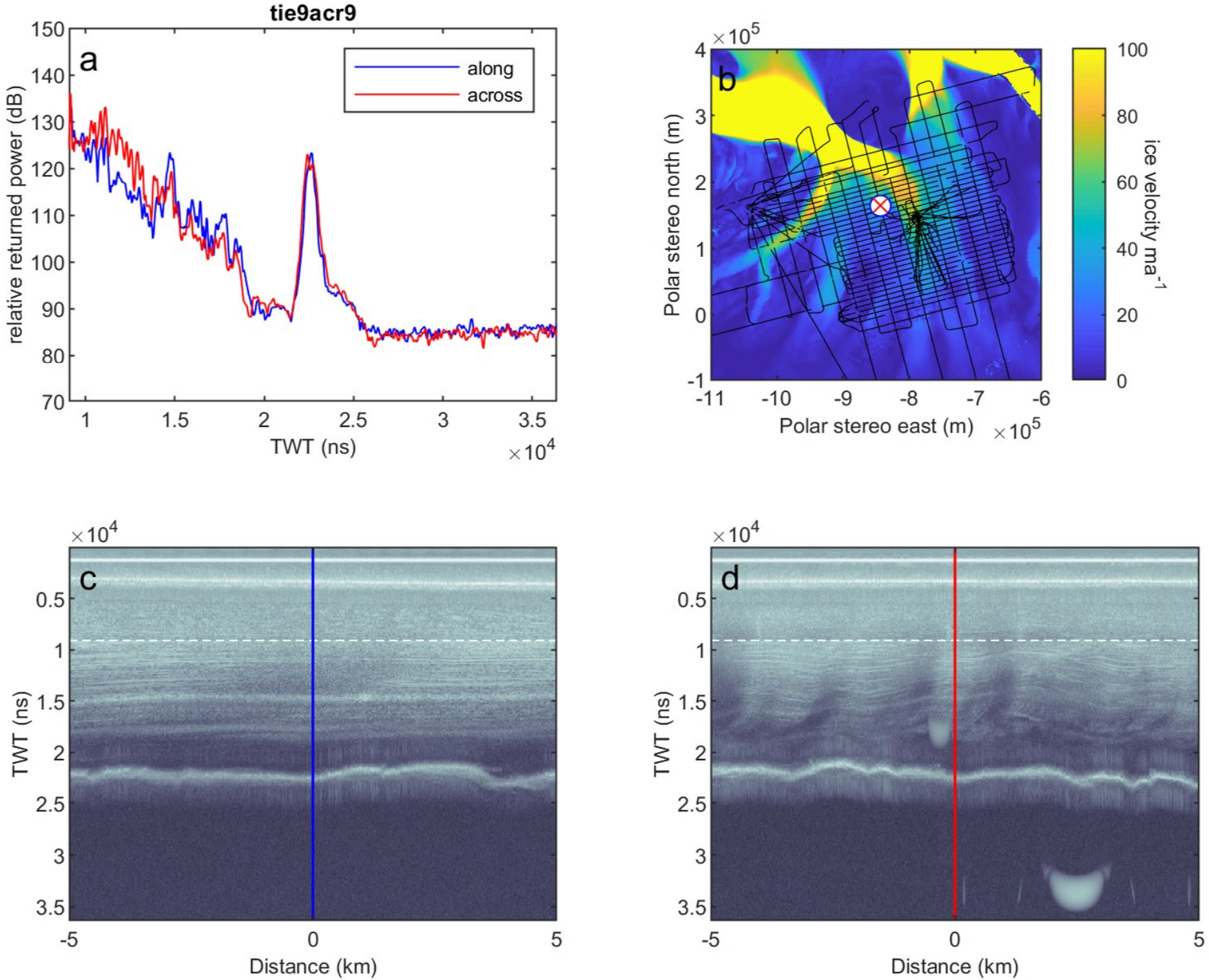
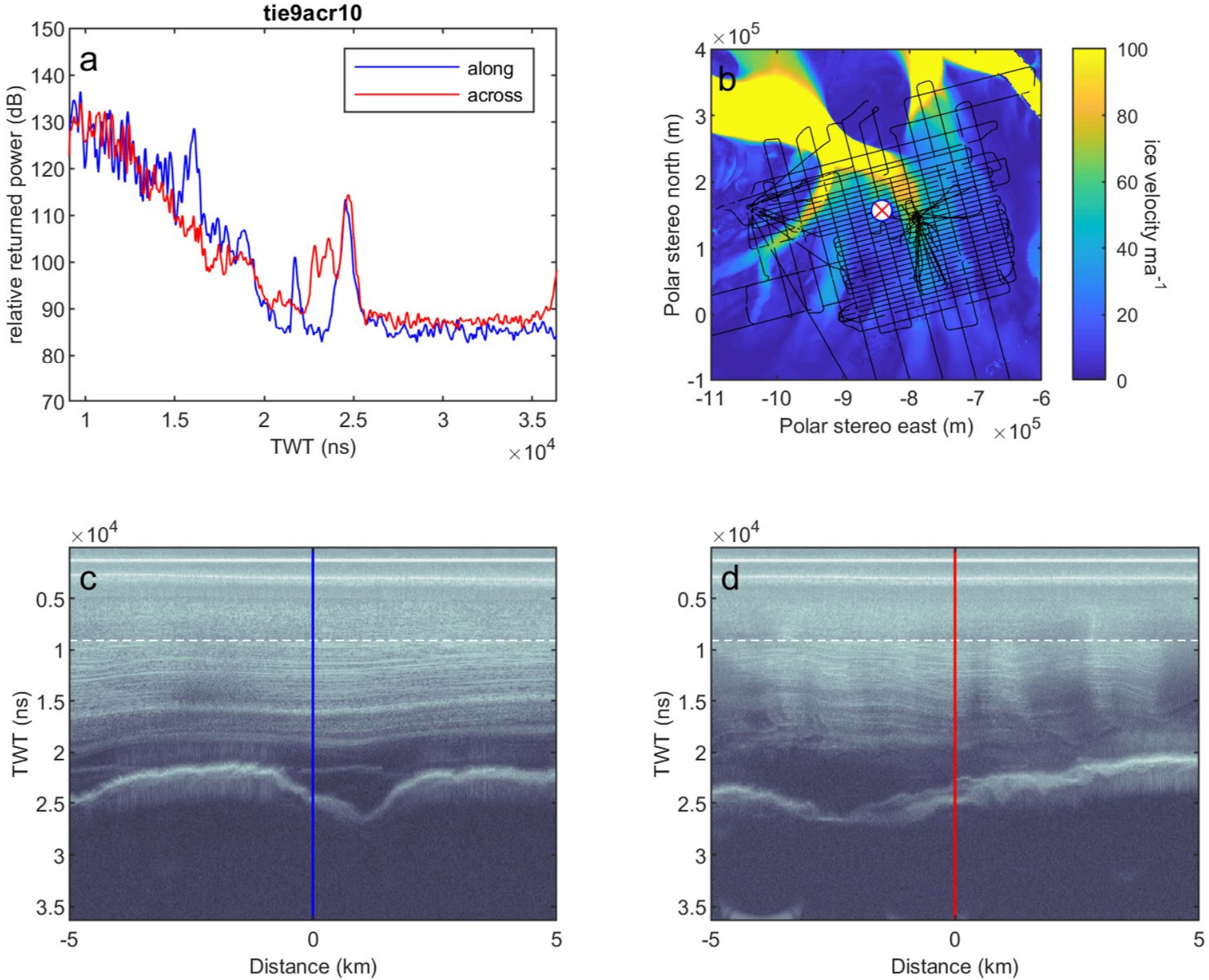
Supplementary Figure 1

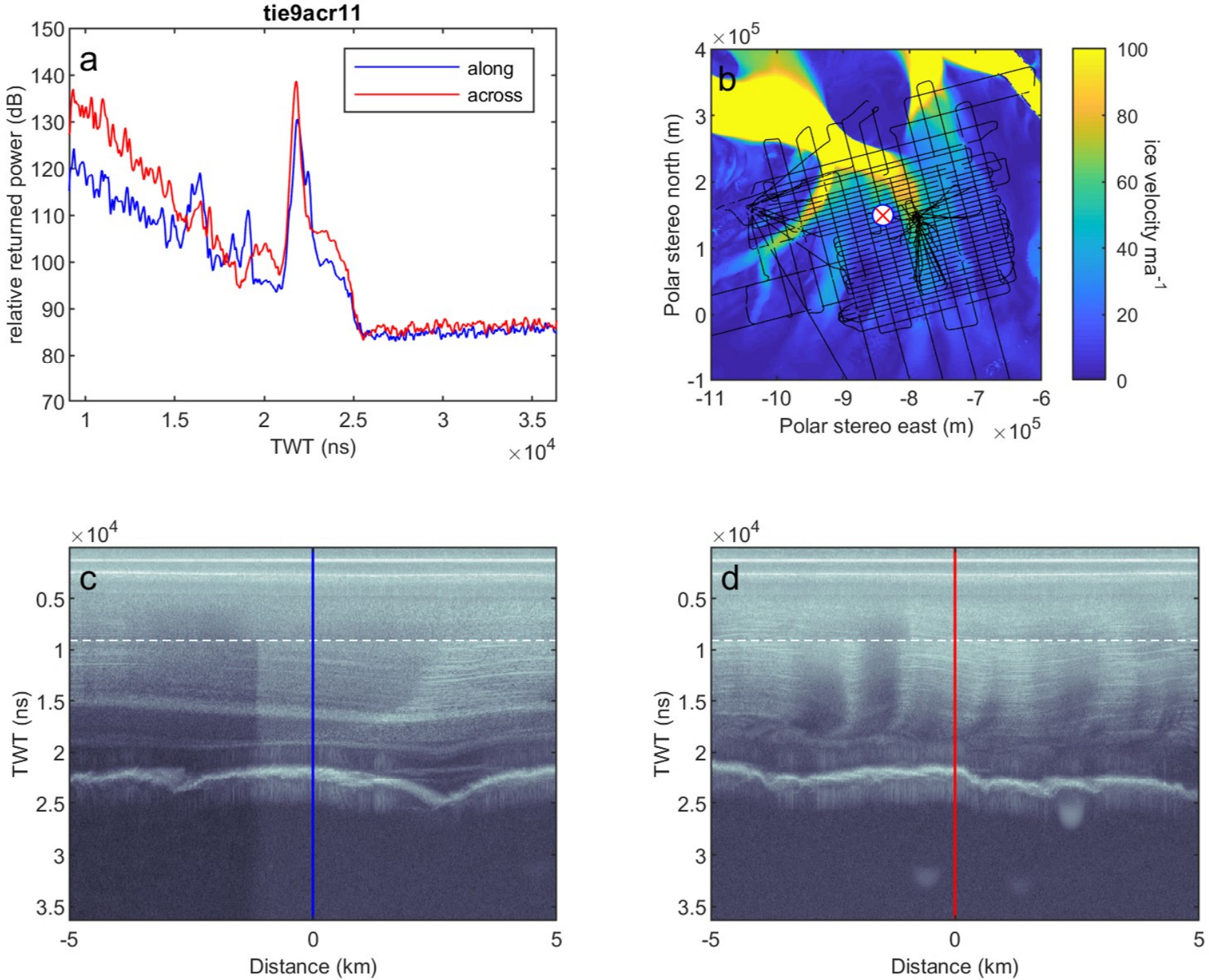
PDF file of crossovers within a subset of the IMAFI survey grid (tie line 9, across lines 7-24), over the area of the IIS characterized by the large-scale englacial folding: (a) relative returned power (dB) for eleven stacked 2D SAR processed traces (~100 m of radar data) along (blue) and across (red) ice flow; (b) location of radar data crossover (red cross with white filled circle), underlain by radar survey grid (thin black lines) and ice velocity (Mouginot et al., 2019), with colour scale saturated at 100 ma^{-1}; (c) radar data along ice flow. Cross-over with across ice flow radar data (see 'd') shown with blue vertical line. Blue profile in 'a' is the returned power of the crossover trace stacked with 5 traces either side; (d) radar data across ice flow. Cross-over with along ice flow radar data 'c' shown with red vertical line. Red profile in 'a' is the returned power of the crossover trace stacked with 5 traces either side. It is important to note that in these examples, unlike the one given in Figure 6, not all the along and across flow radar data were acquired at the crossover location with the same aircraft altitude, and therefore the same range to ice surface. At the crossovers where the aircraft range does differ (i.e. tie9acr15 – where the ice surface and bed reflections are clearly offset to each other), care should be taken comparing the along and across flow data, as the geometry and anisotropy of the ice could be responsible for the pronounced anisotropy of the deep ice unit reflectivity. We include all data for completeness however. White dashed lines in 'c' and 'd' define the boundary (200th vertical sample) between radar data SAR-processed (below line) and radar data not SAR-processed (above line). Information on SAR processing is available in Jeofry et al., (2018a).

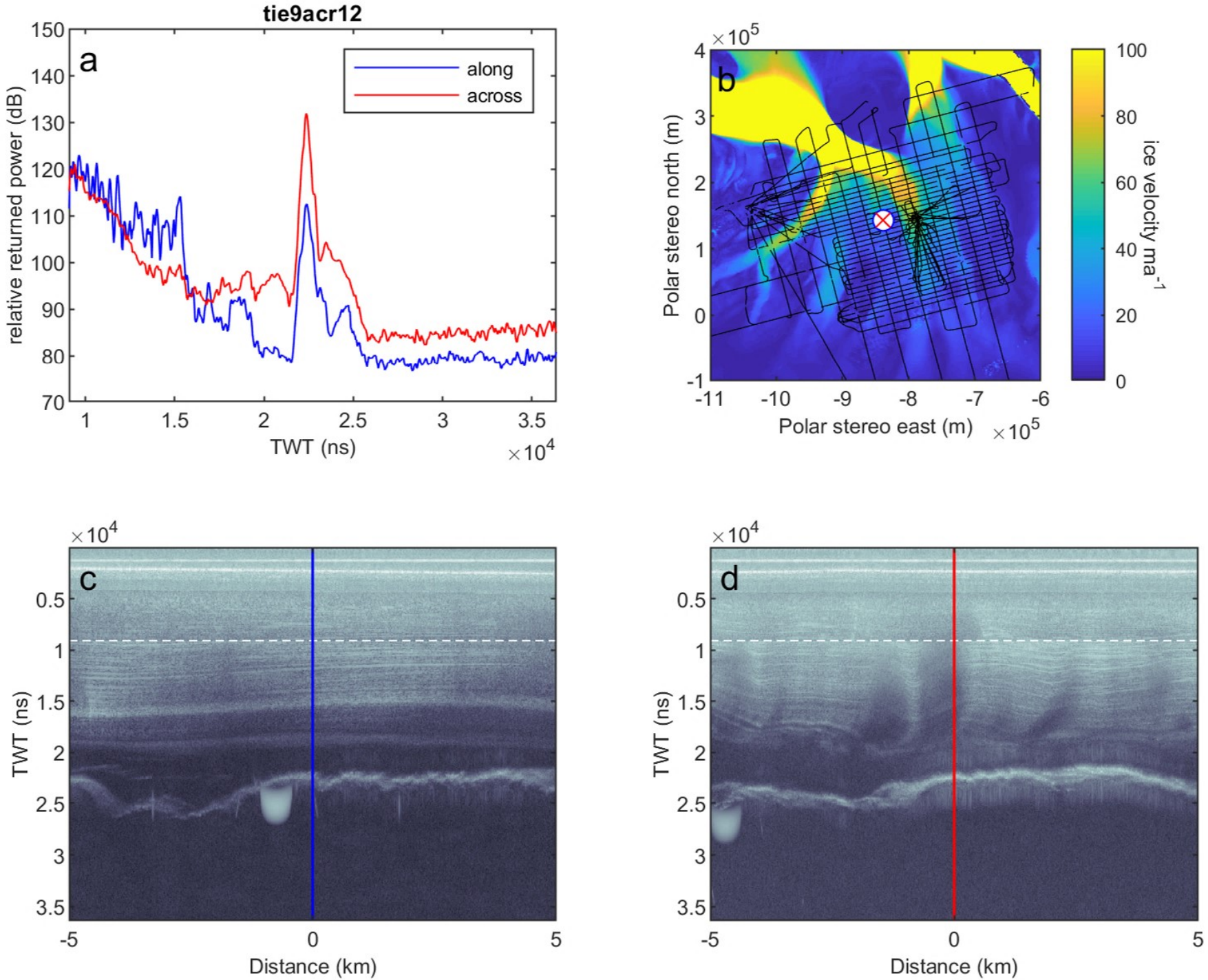

tie9acr7
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

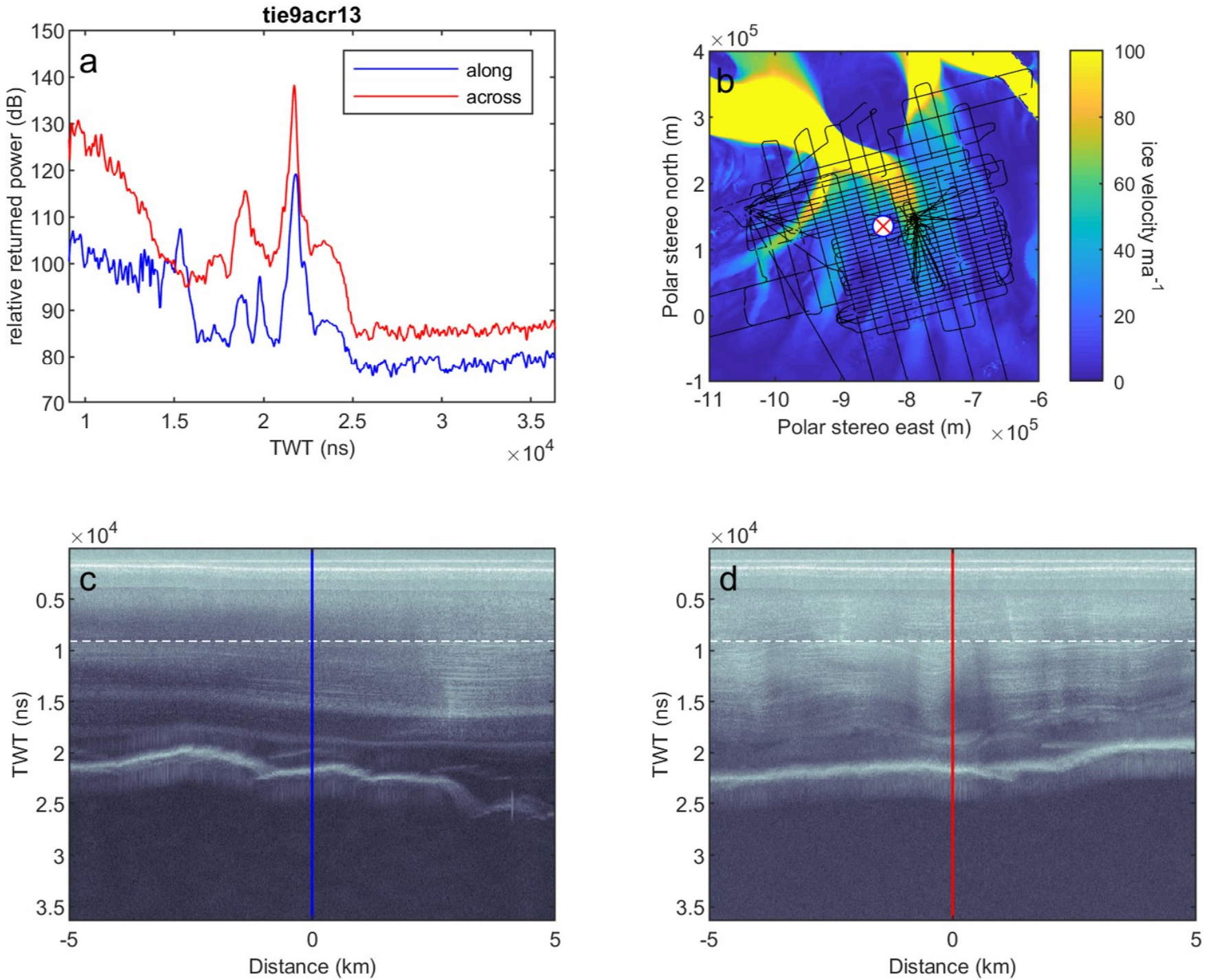

tie9acr8
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

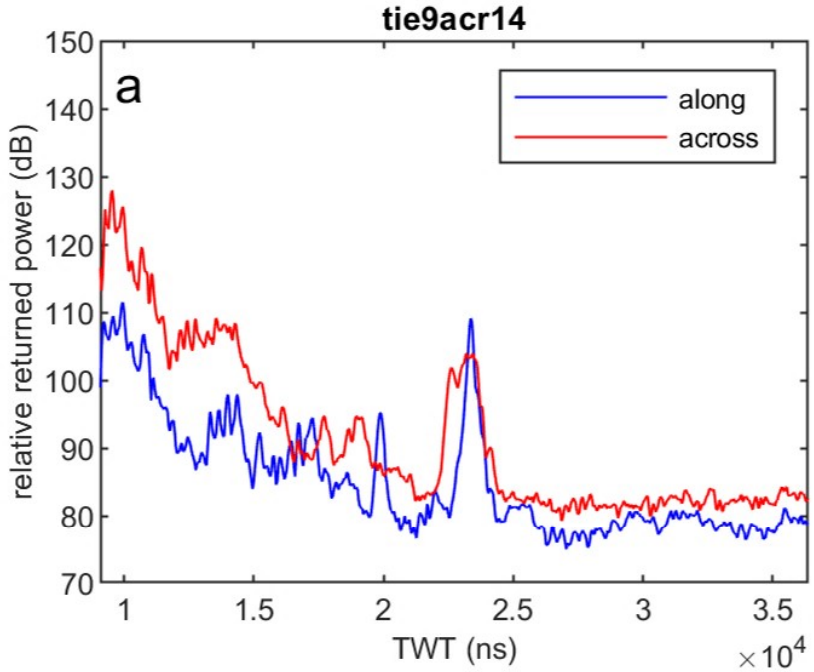

tie9acr9
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

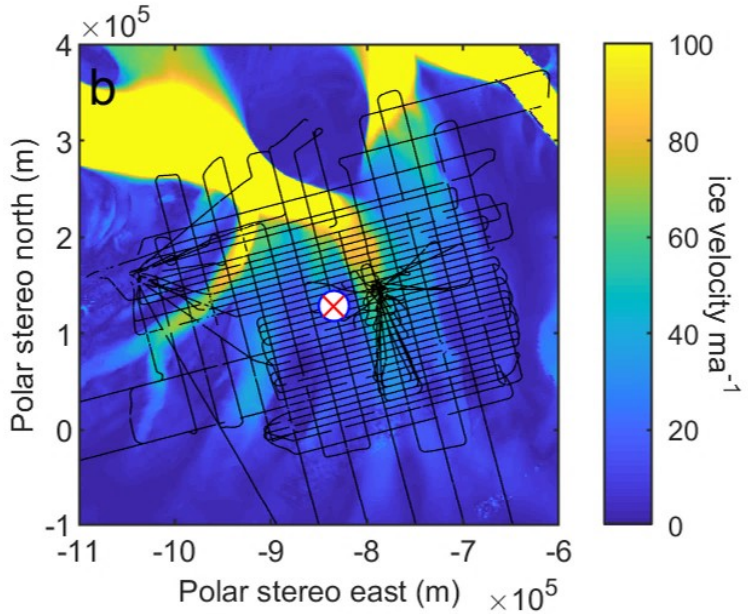

tie9acr10
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

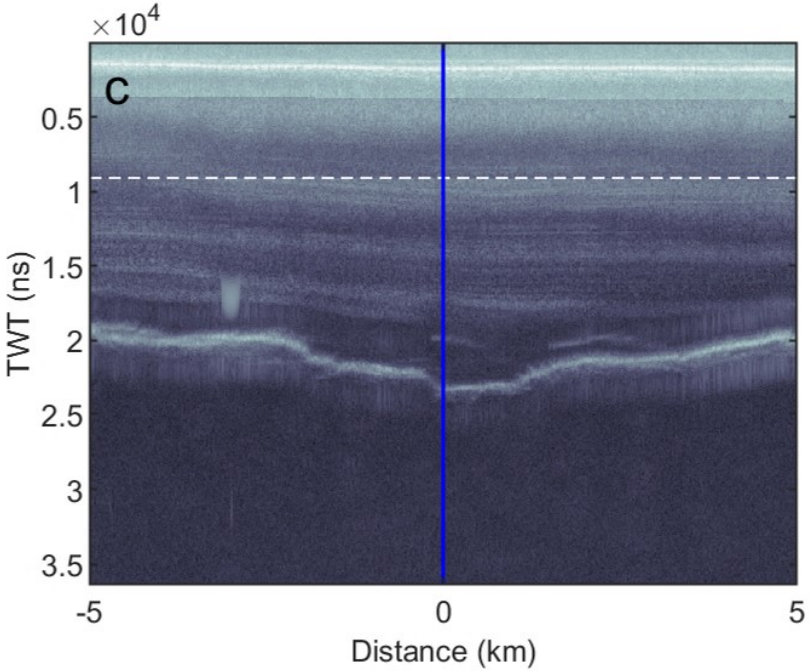

tie9acr11
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

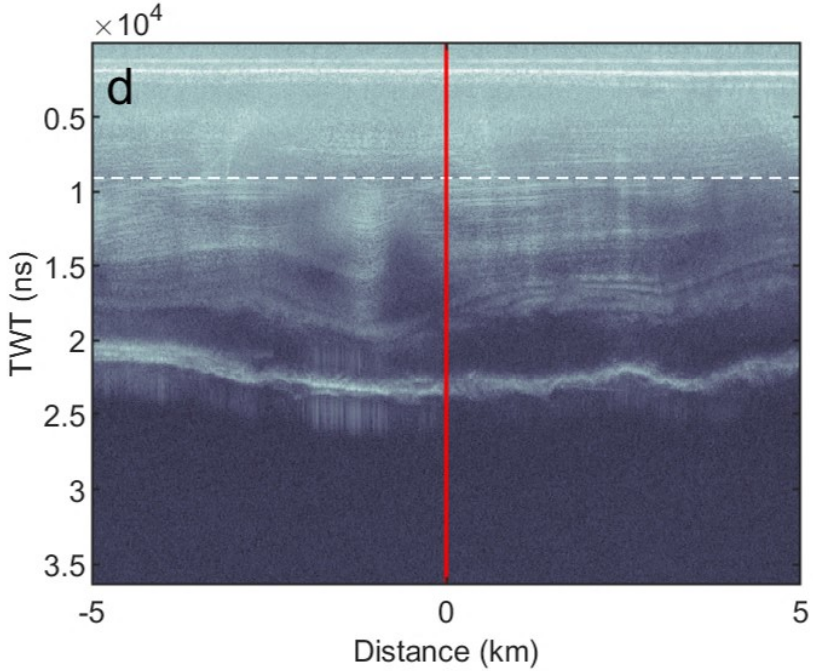

tie9acr12
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

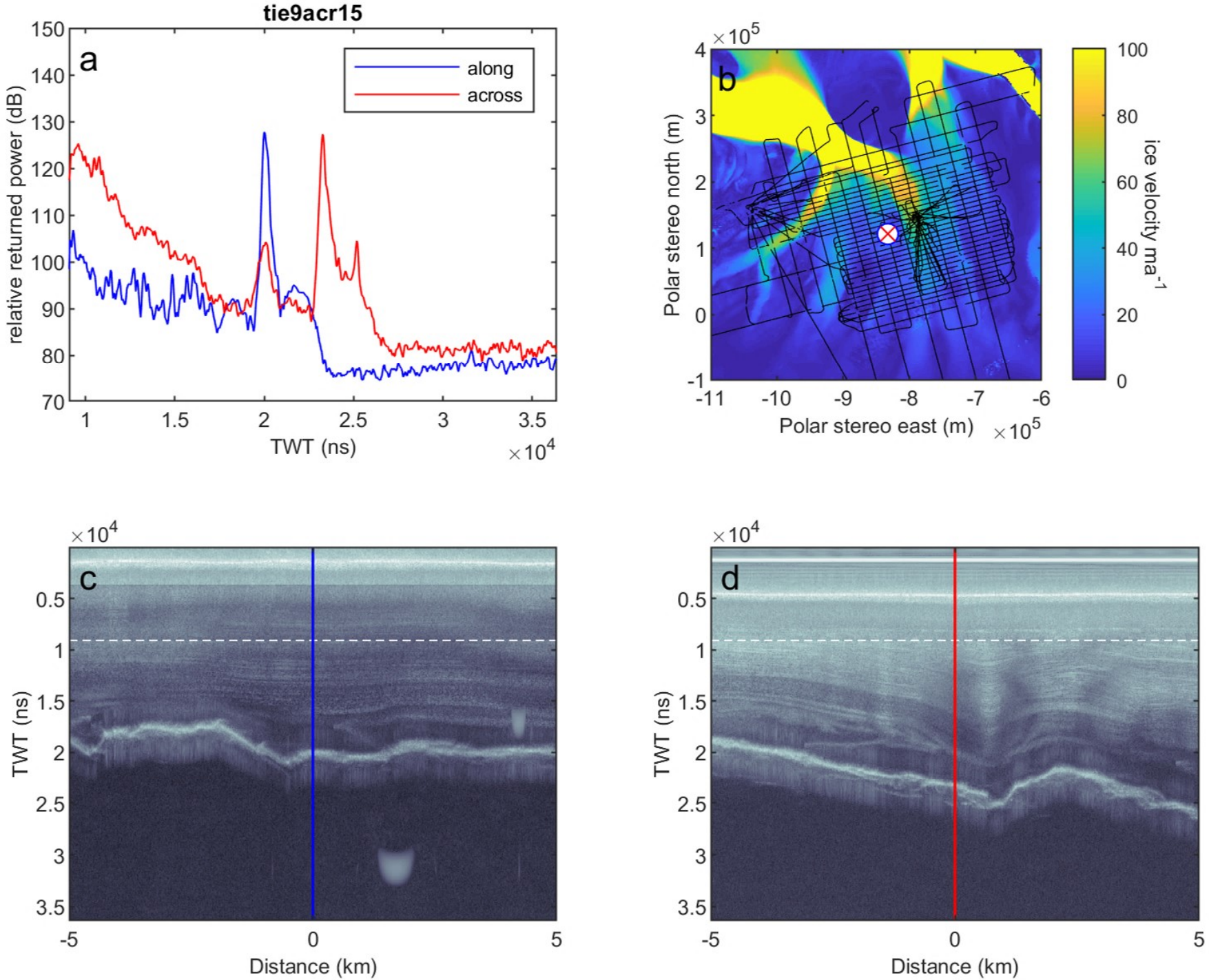

tie9acr13
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

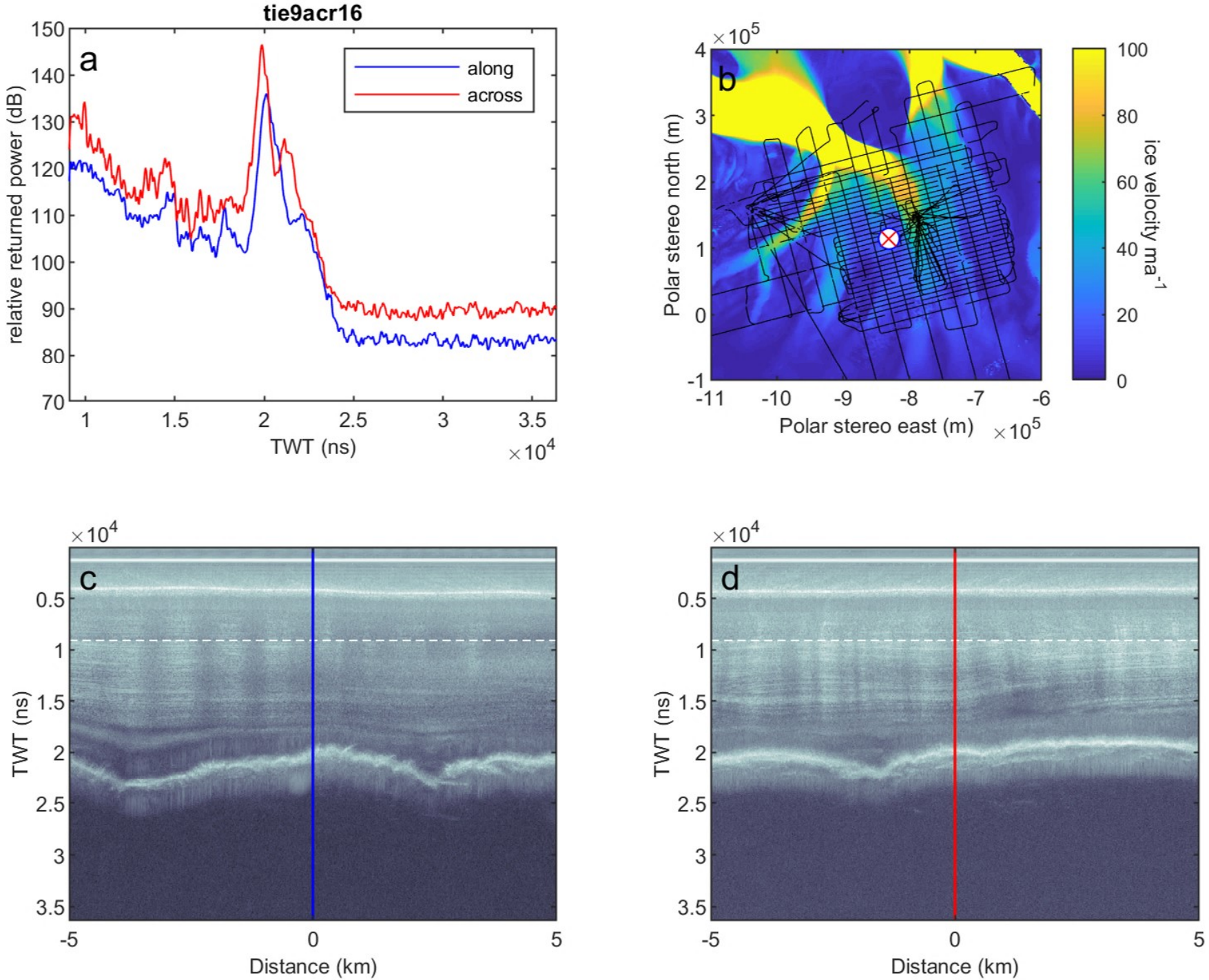

tie9acr14
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

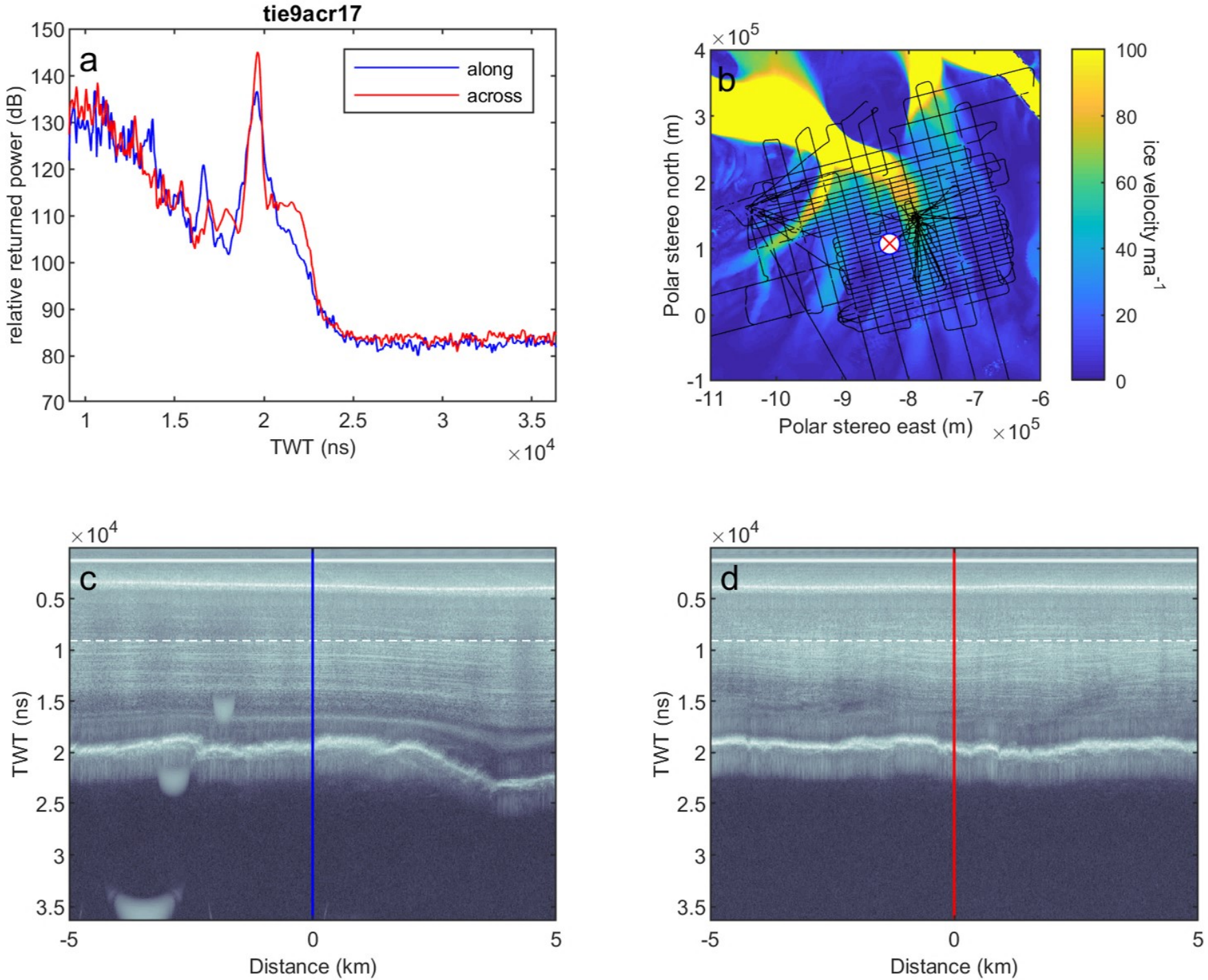

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

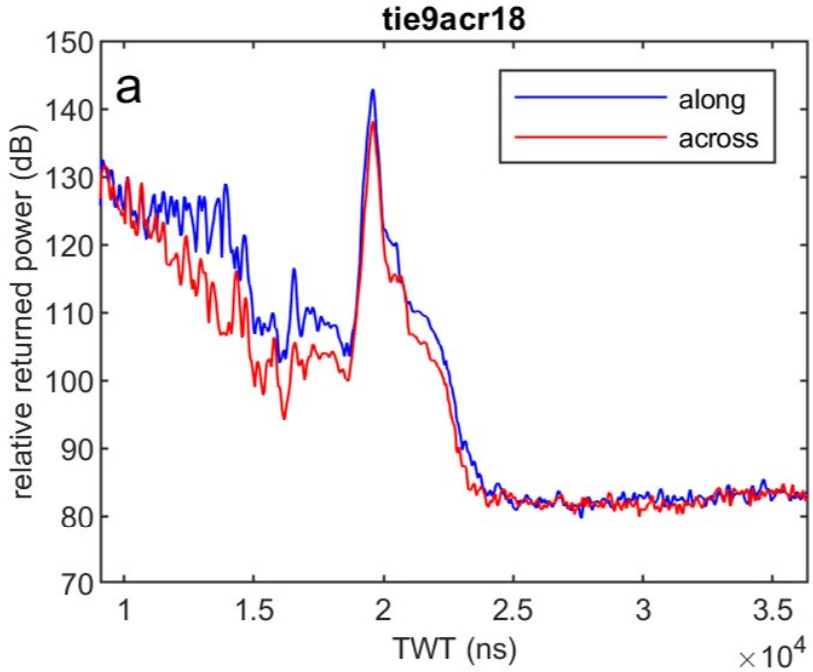

c
×10^4
TWT (ns)
Distance (km)

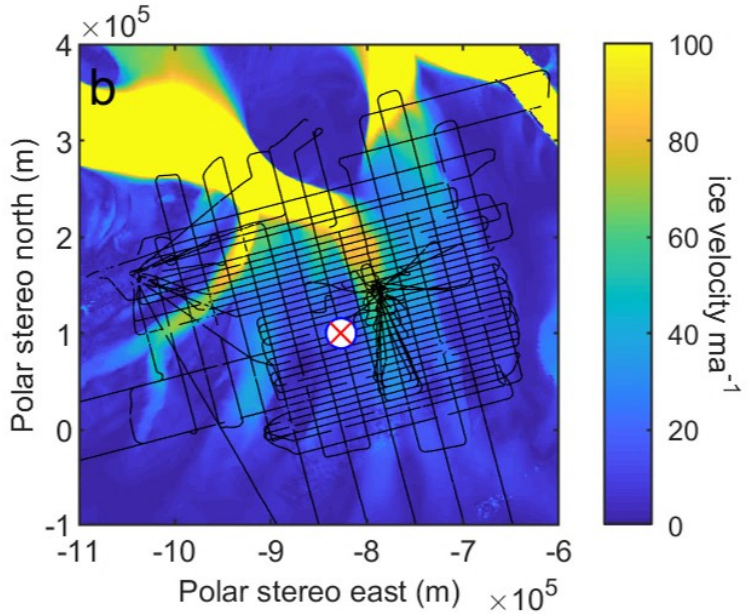

d
×10^4
TWT (ns)
Distance (km)

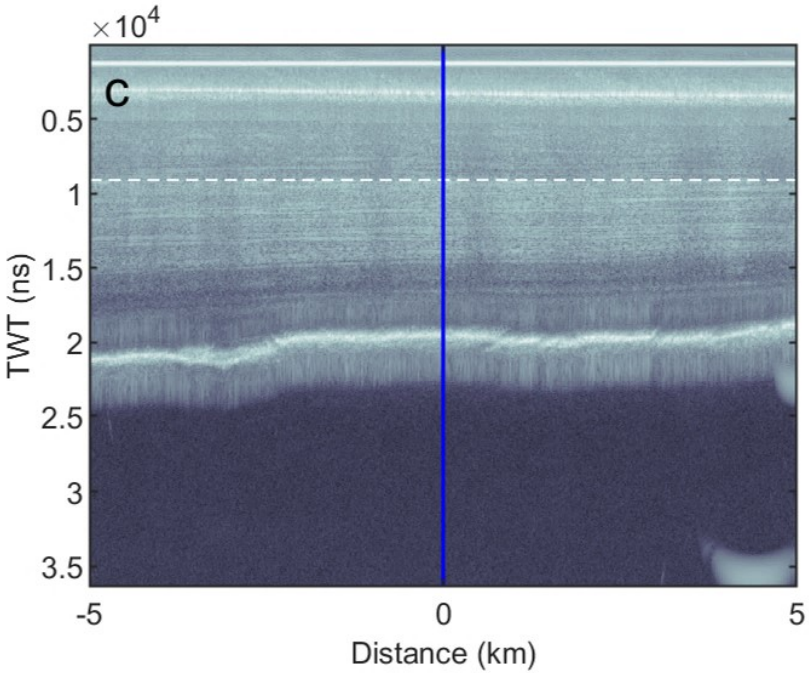

tie9acr15
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

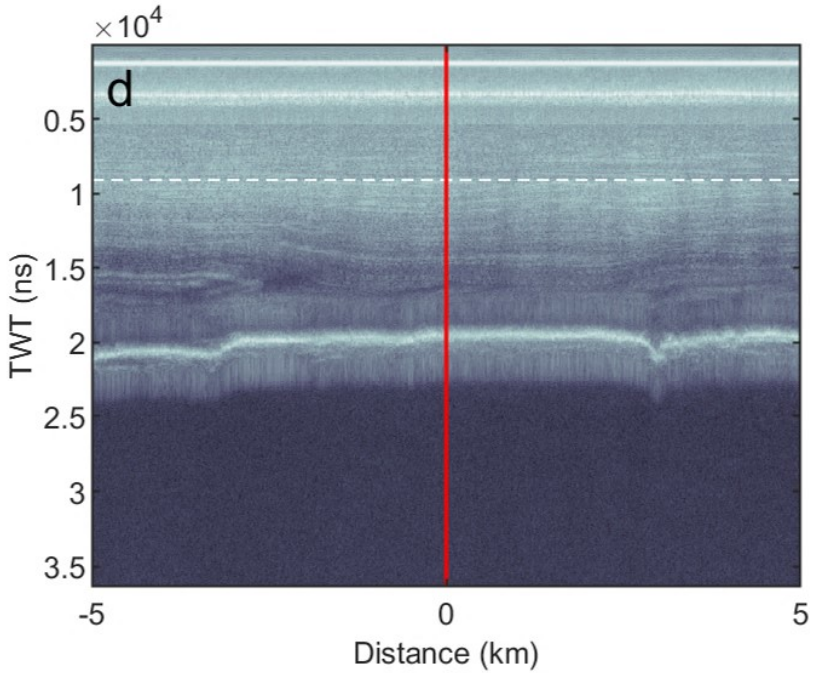

tie9acr16
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

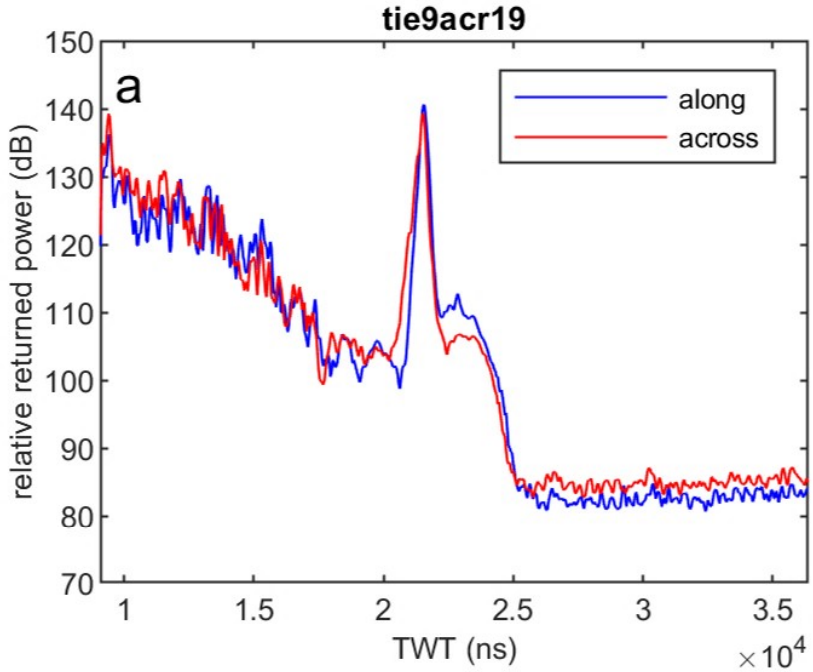

tie9acr17
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

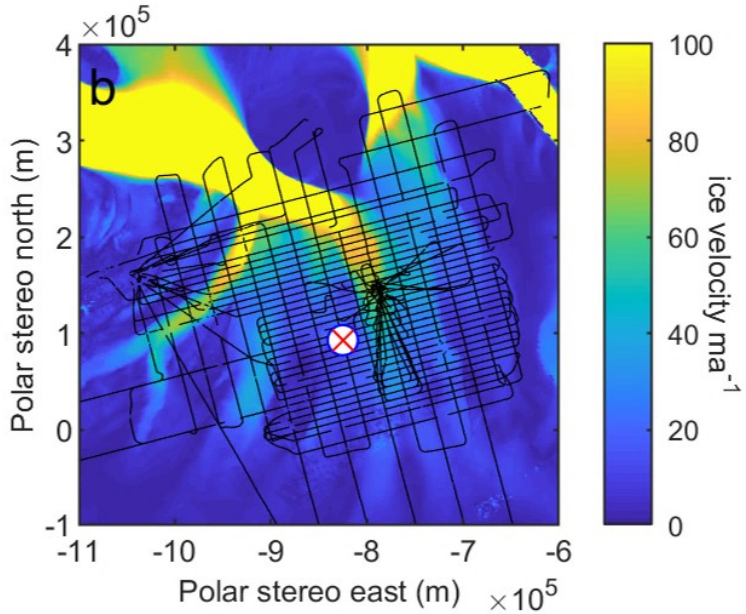

tie9acr18
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

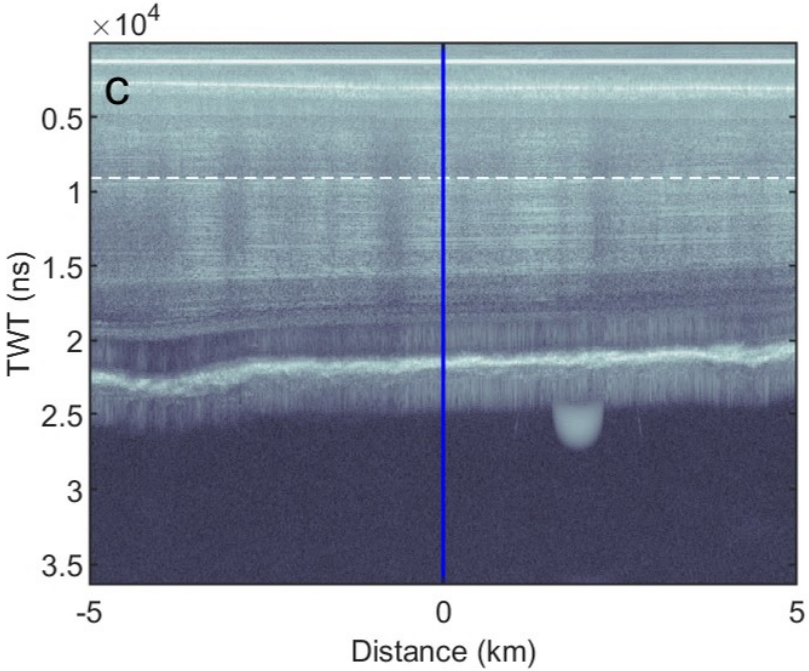

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

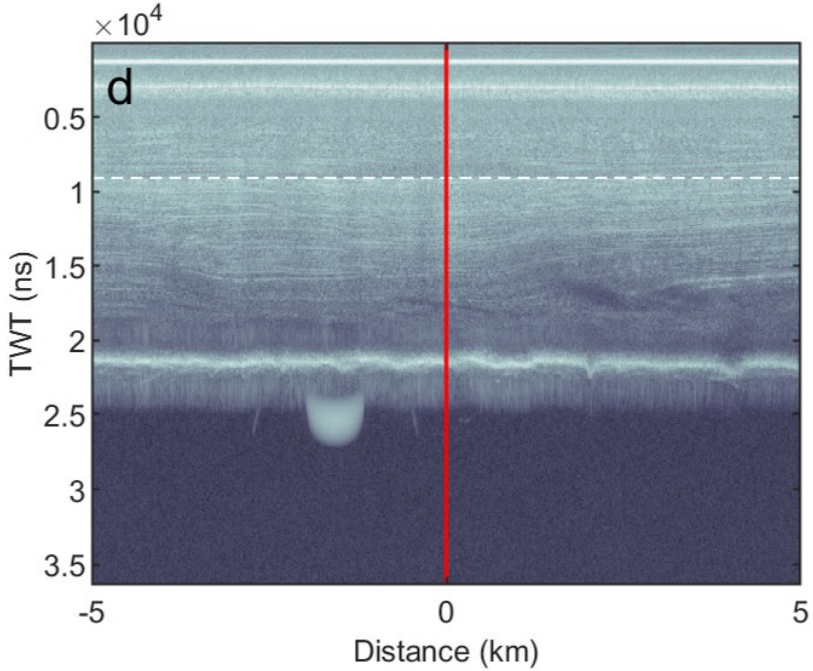

c
×10^4
TWT (ns)
Distance (km)

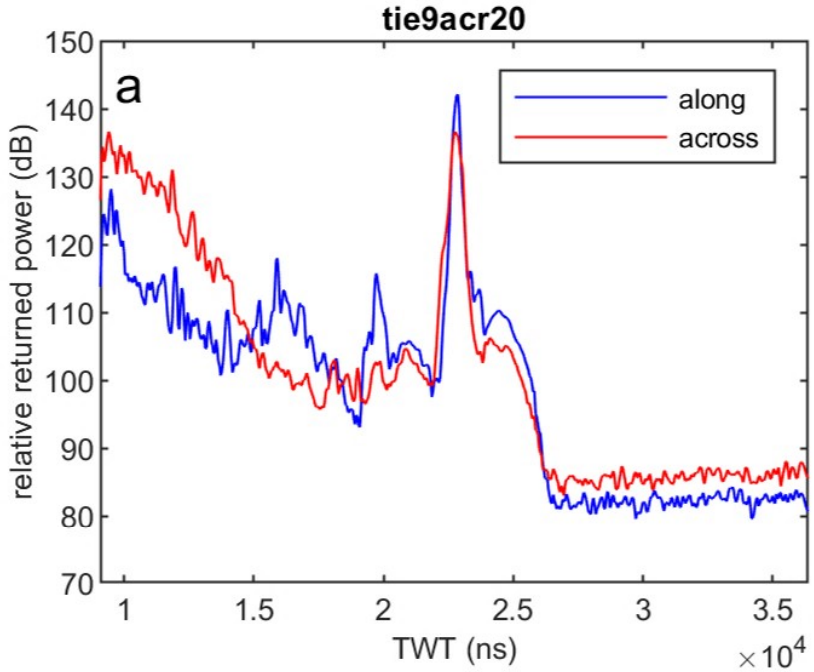

d
×10^4
TWT (ns)
Distance (km)

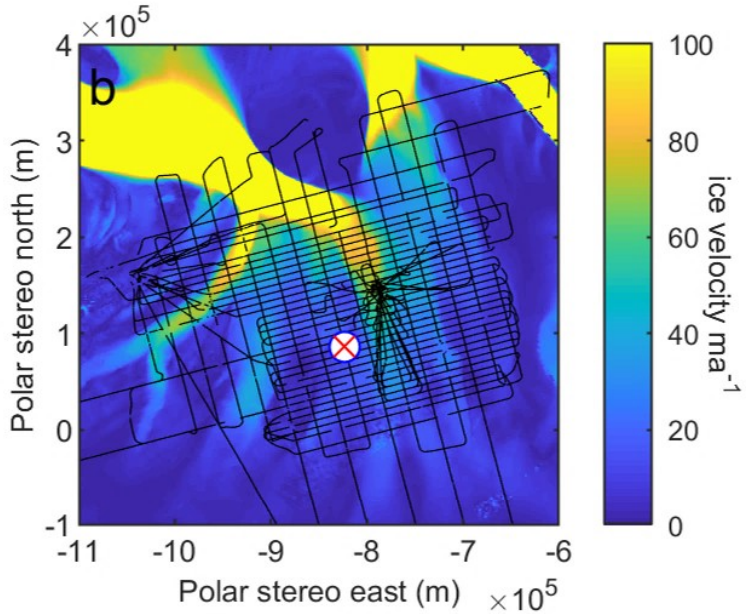

tie9acr19
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

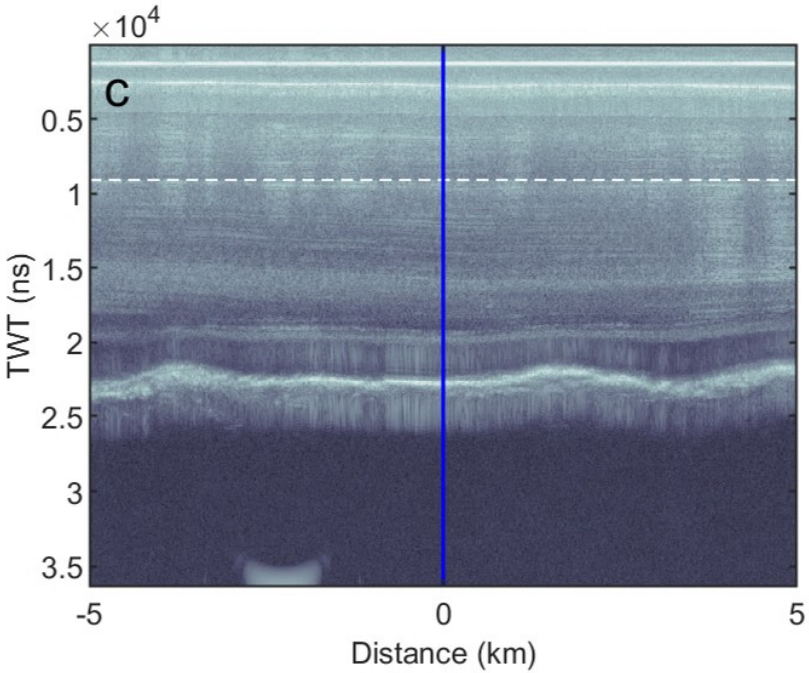

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

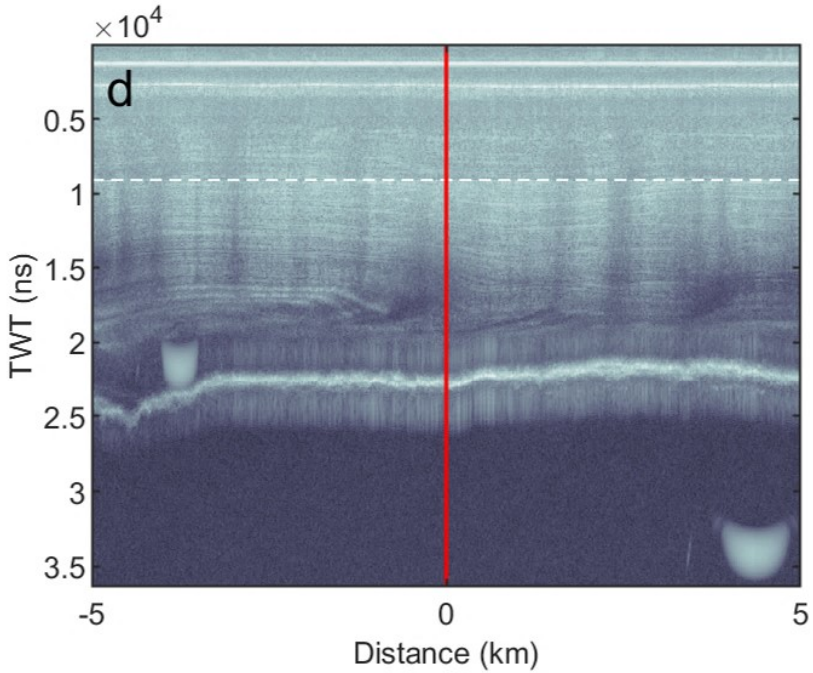

c
×10^4
TWT (ns)
Distance (km)

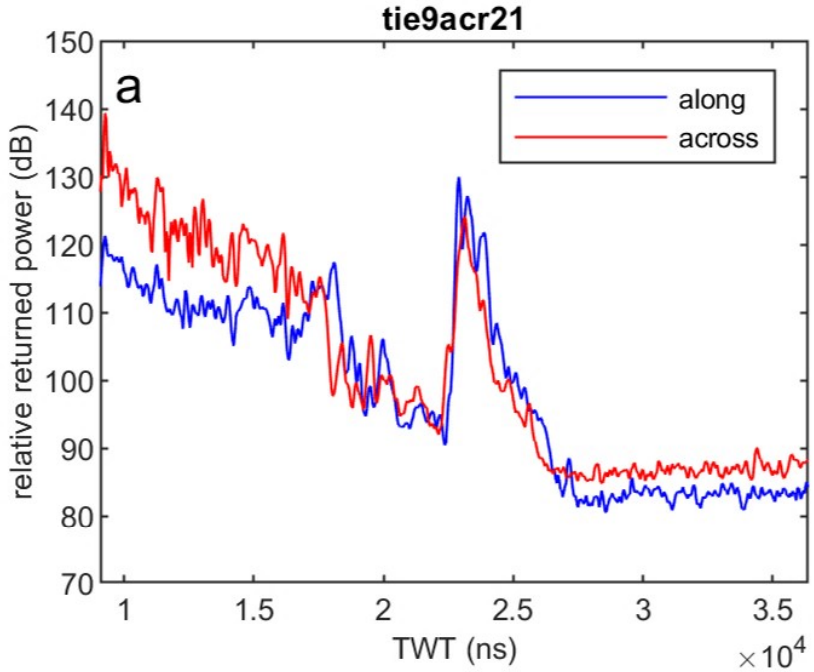

d
×10^4
TWT (ns)
Distance (km)

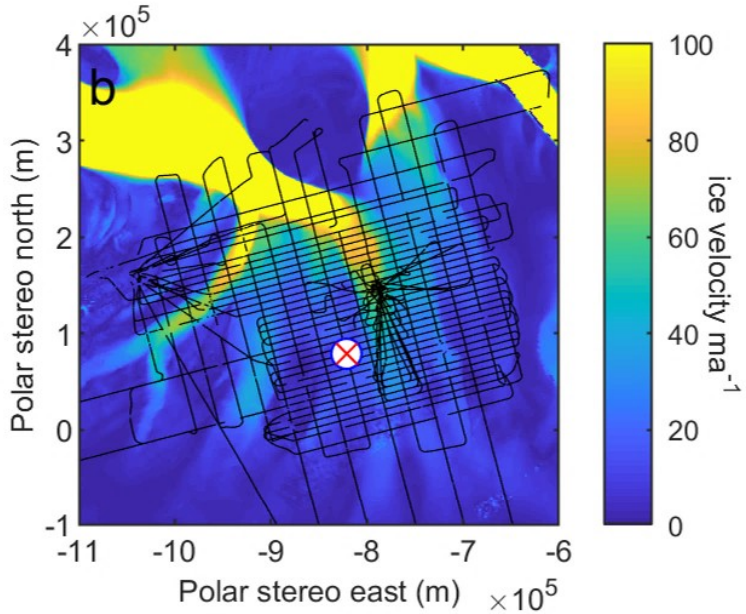

tie9acr20
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

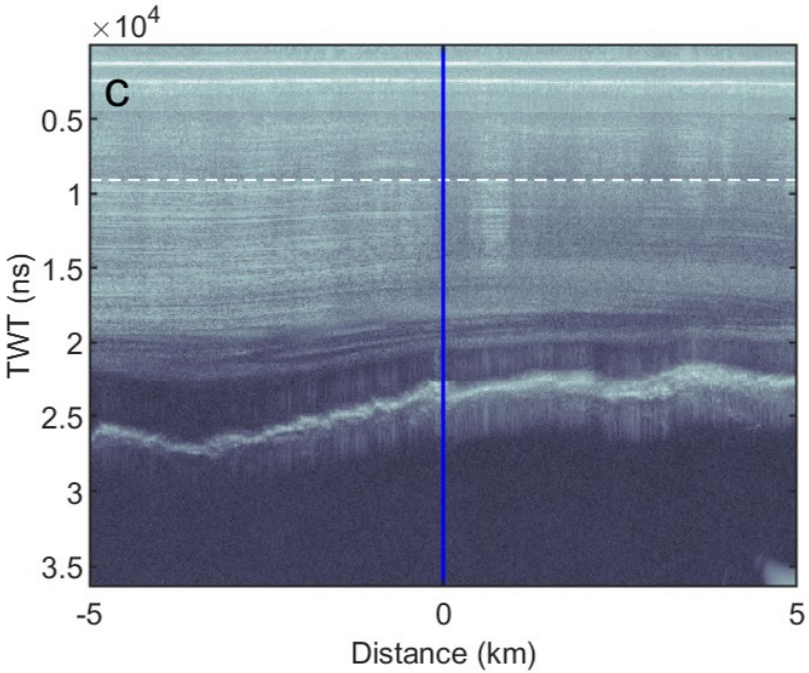

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

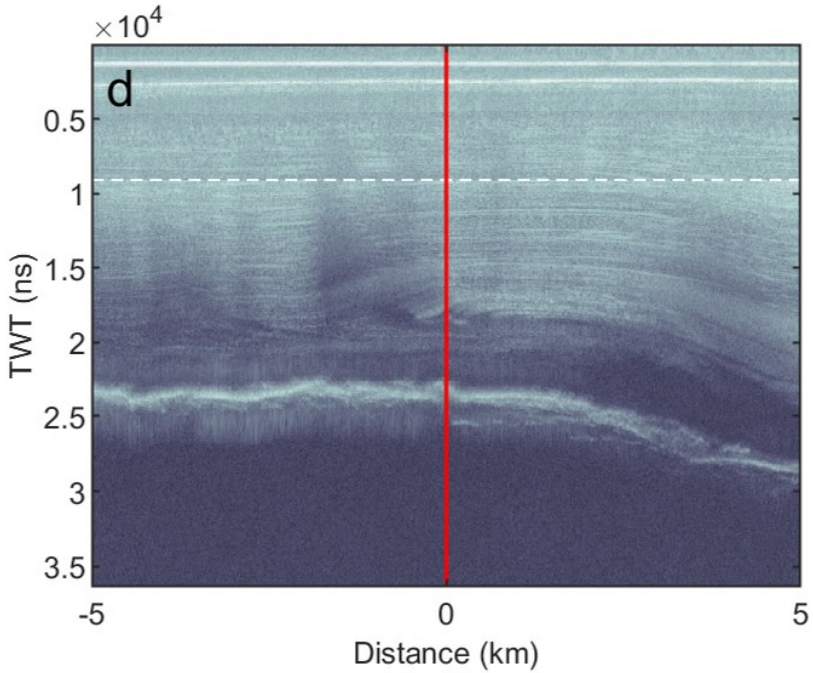

c
×10^4
TWT (ns)
Distance (km)

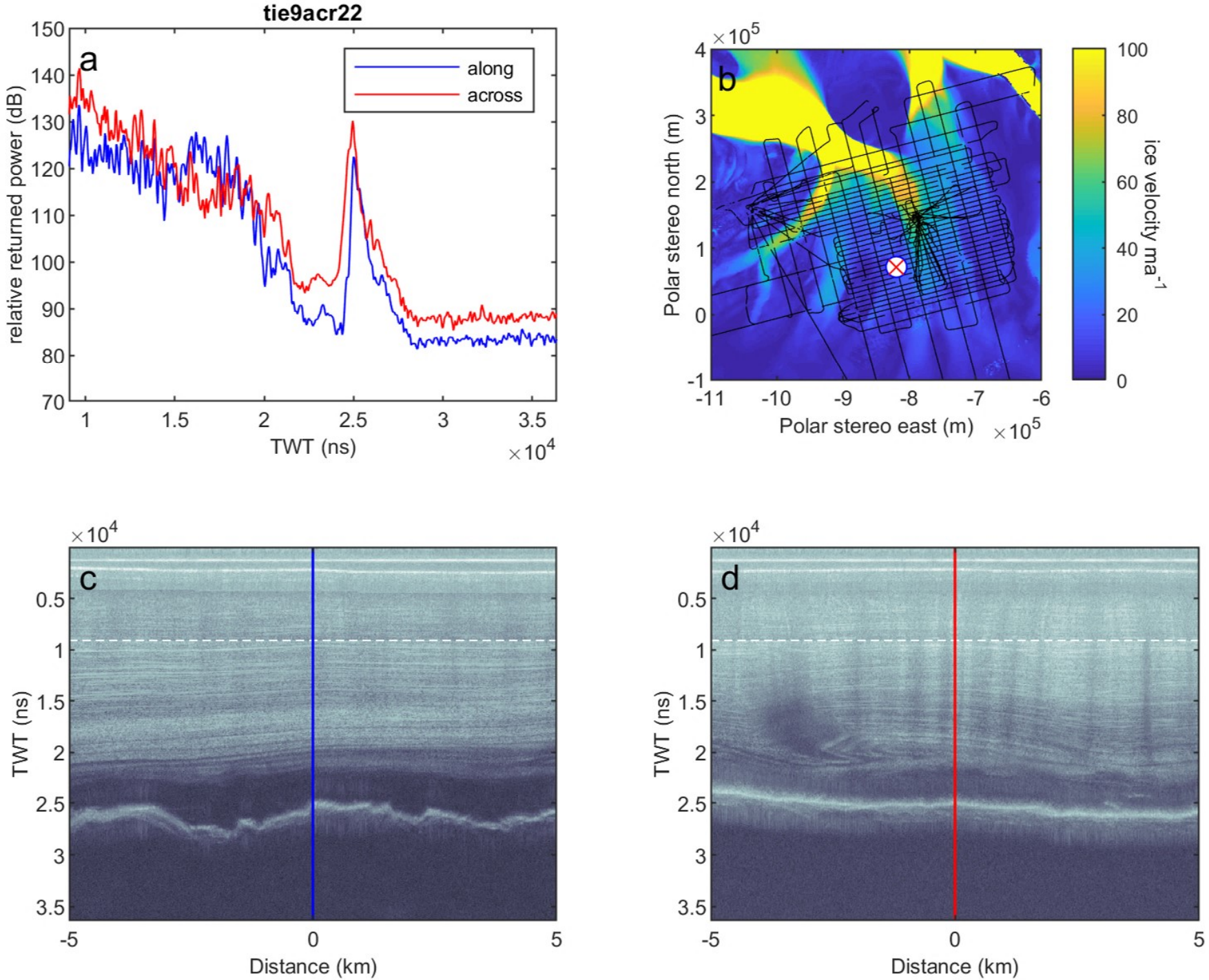

d
×10^4
TWT (ns)
Distance (km)

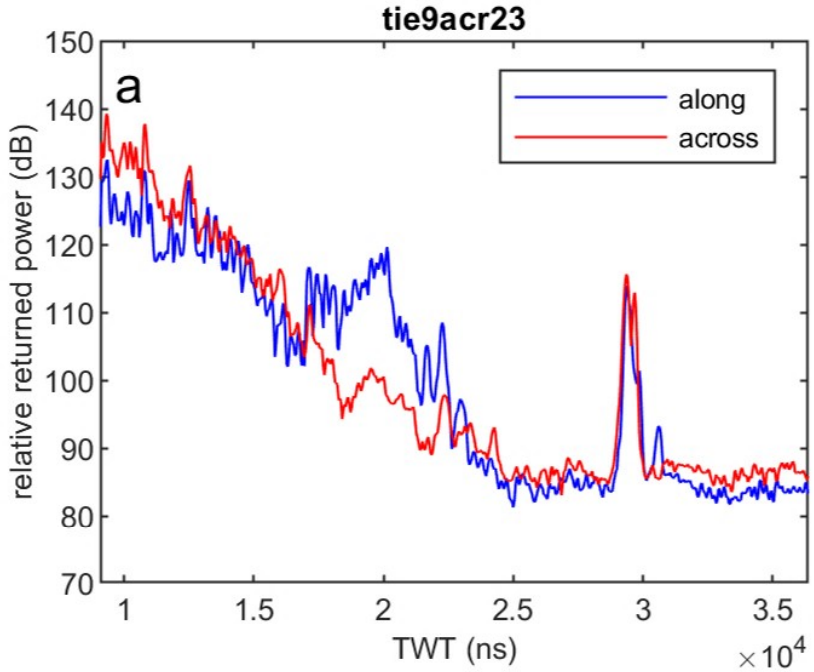

tie9acr21
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

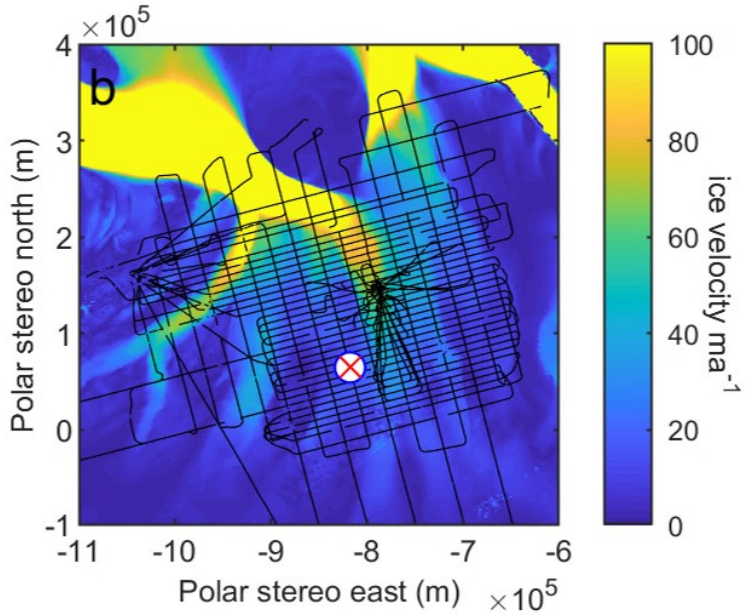

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

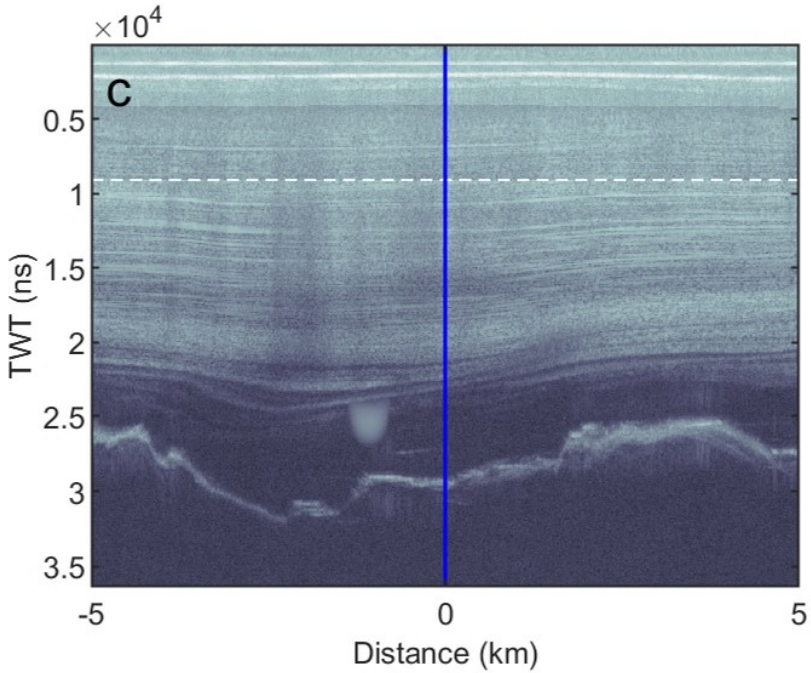

c
×10^4
TWT (ns)
Distance (km)

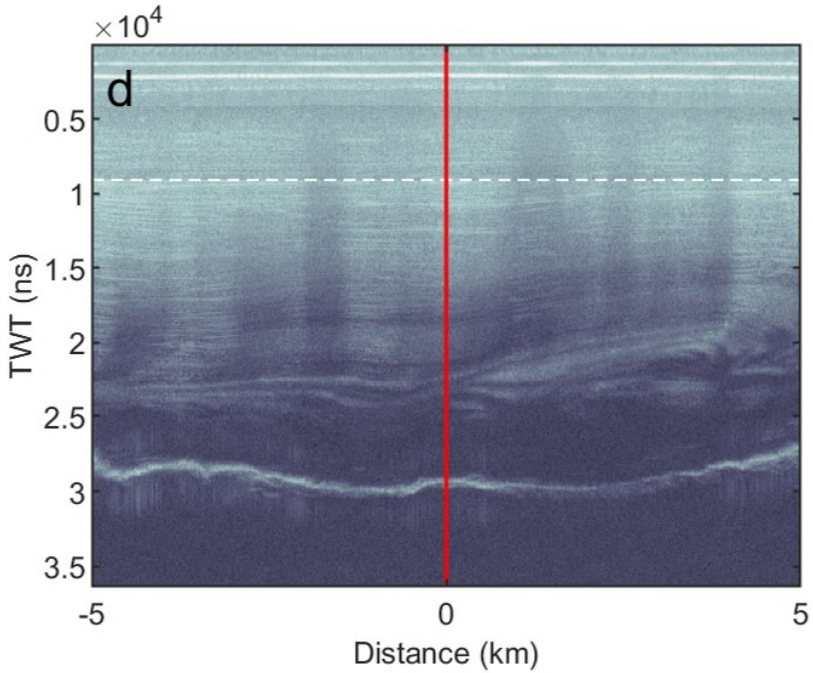

d
×10^4
TWT (ns)
Distance (km)

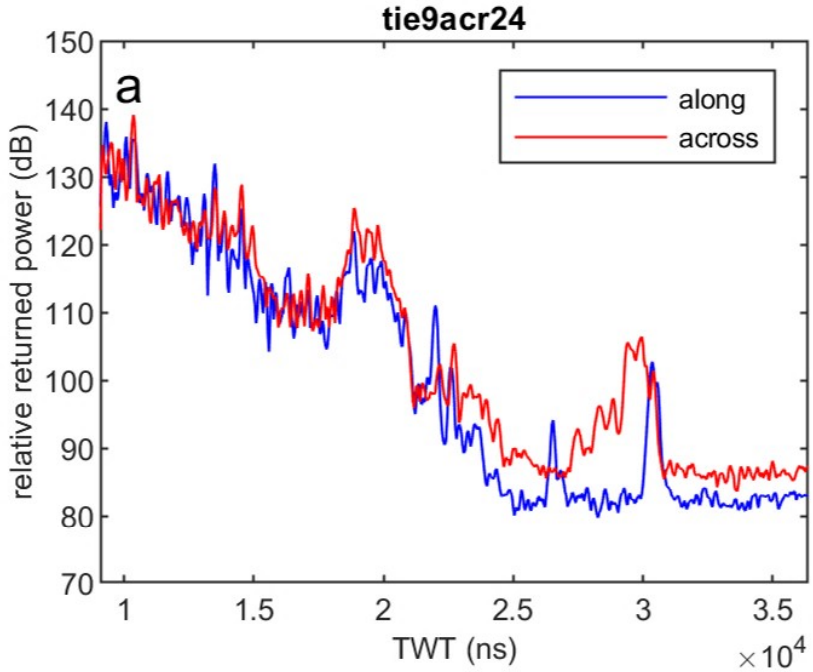

tie9acr22
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

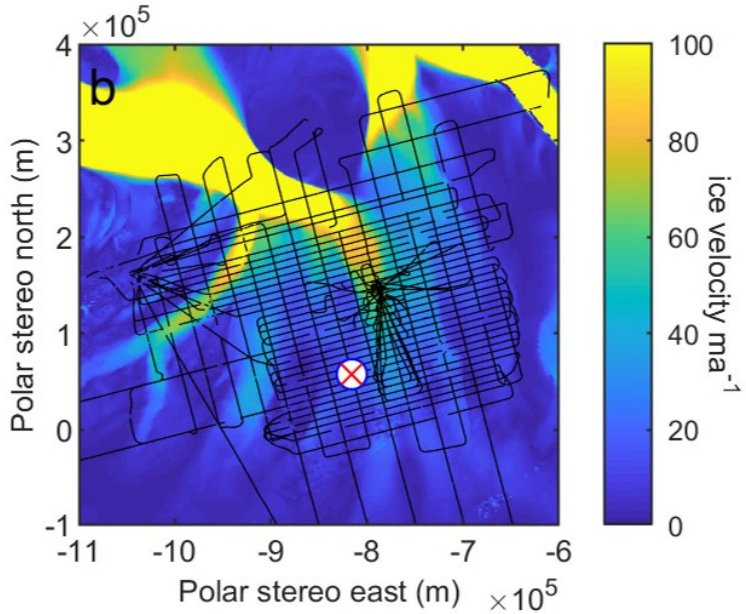

tie9acr23
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

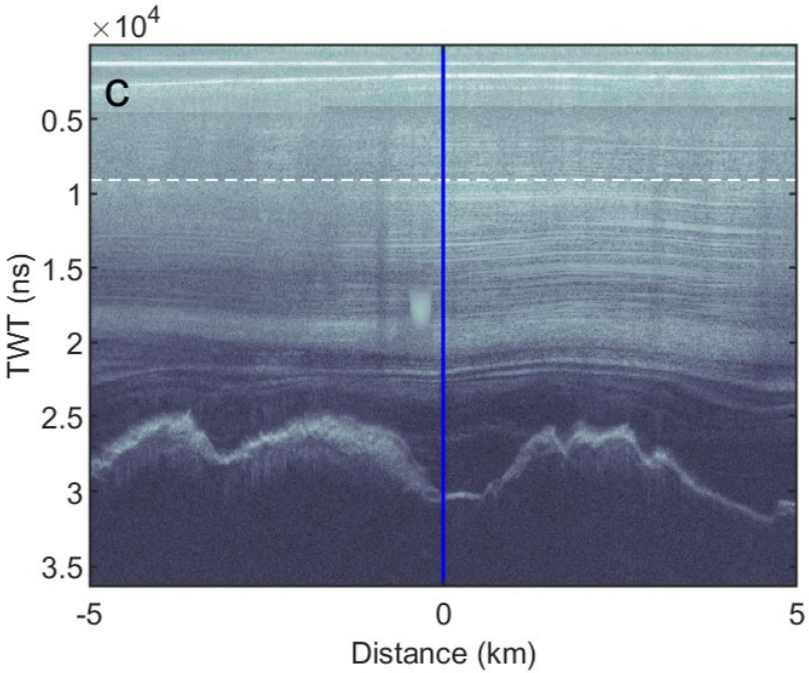

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

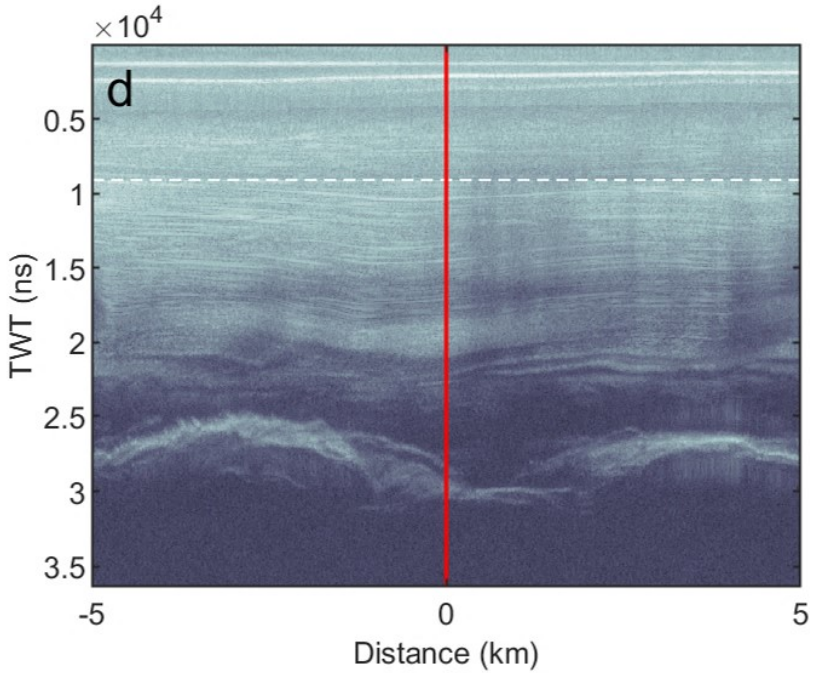

c
×10^4
TWT (ns)
Distance (km)


d
×10^4
TWT (ns)
Distance (km)


tie9acr24
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

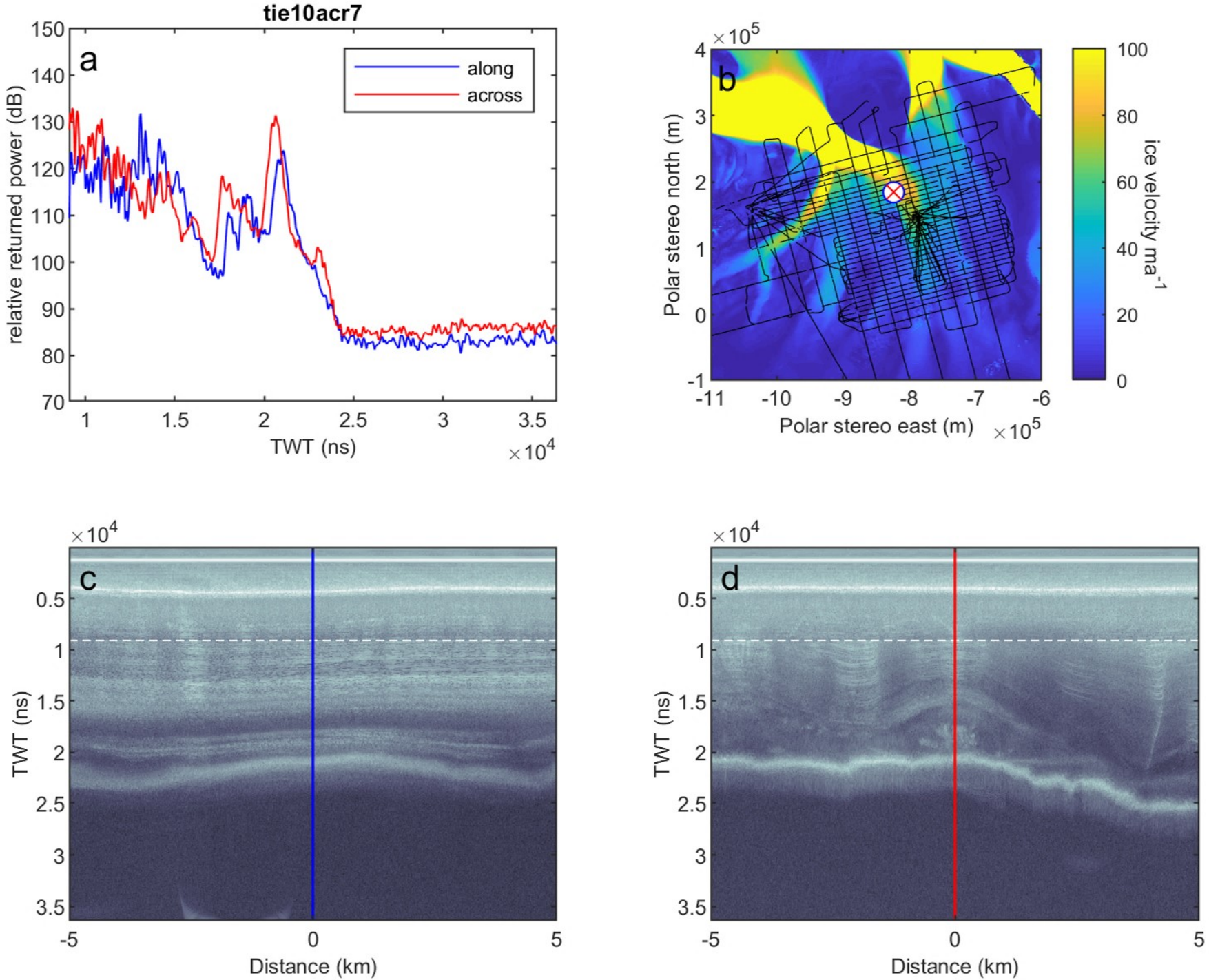

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

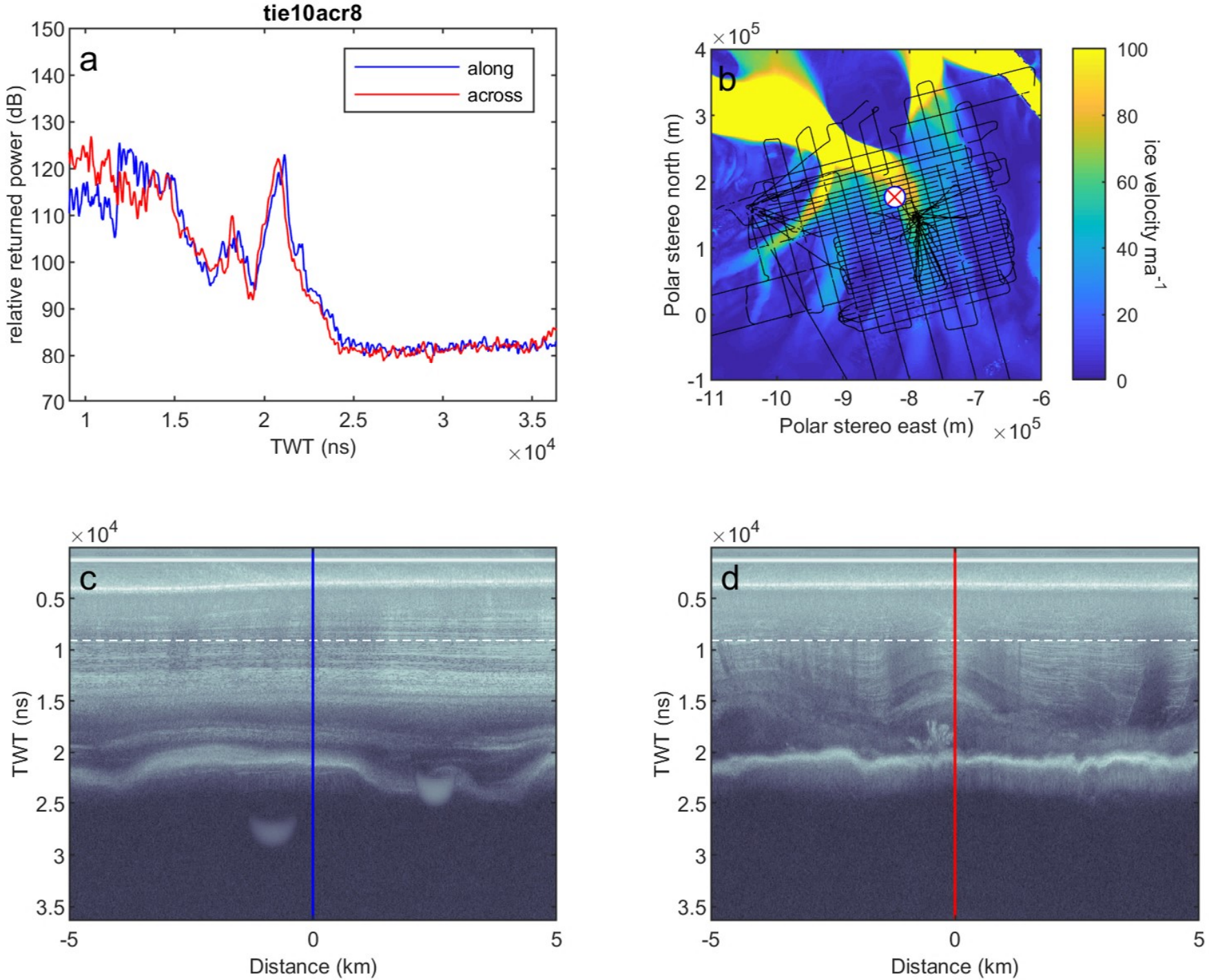

c
×10^4
TWT (ns)
Distance (km)

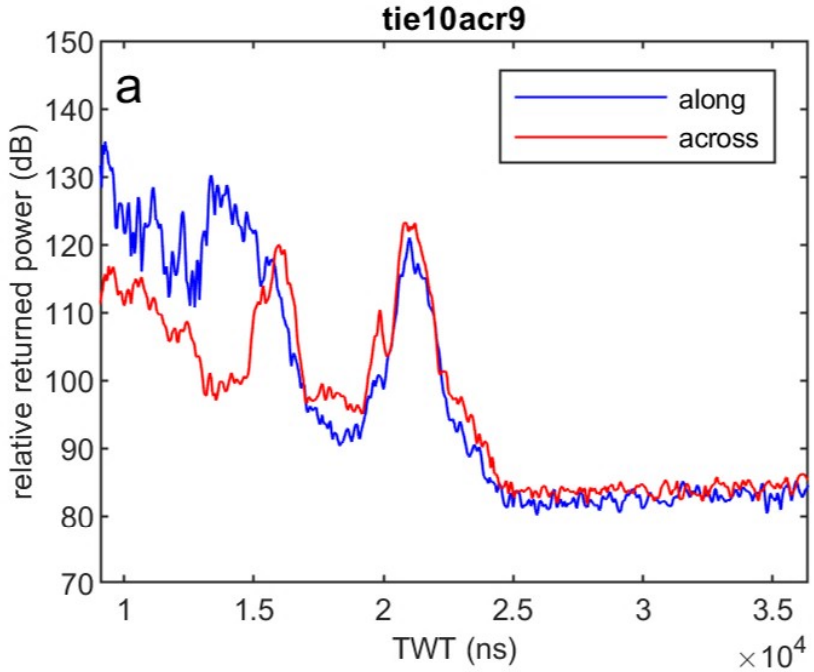

d
×10^4
TWT (ns)
Distance (km)

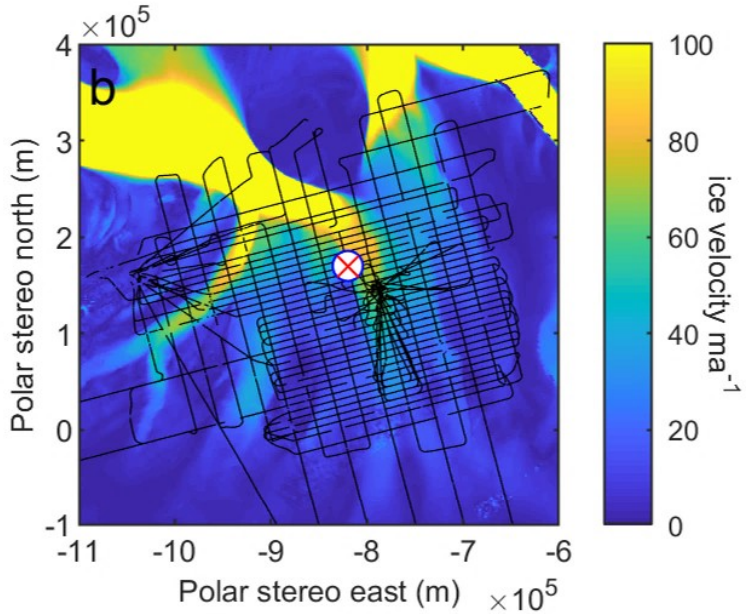
Supplementary Figure 2

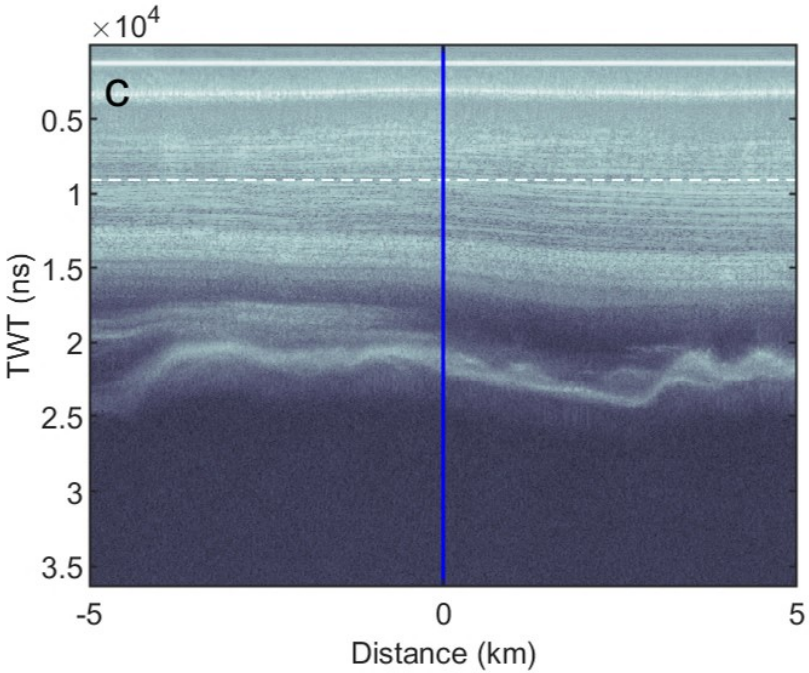
PDF files of crossovers within a subset of the IMAFI survey grid (tie line 10, across lines 7-24), over the area of the IIS characterized by the large-scale englacial folding: (a) relative returned power (dB) for eleven stacked 2D SAR processed traces (~100 m of radar data) along (blue) and across (red) ice flow; (b) location of radar data crossover (red cross with white filled circle), underlain by radar survey grid (thin black lines) and ice velocity (Mouginot et al., 2019), with colour scale saturated at 100 ma^{-1}. (c) radar data along ice flow. Cross-over with across ice flow radar data (see 'd') shown with blue vertical line. Blue profile in 'a' is the returned power of the crossover trace stacked with 5 traces either side; (d) radar data across ice flow. Cross-over with along ice flow radar data 'c' shown with red vertical line. Red profile in 'a' is the returned power of the crossover trace stacked with 5 traces either side. It is important to note that in these examples, unlike the one given in Figure 6, not all the along and across flow radar data were acquired at the crossover location with the same aircraft altitude, and therefore the same range to ice surface. At the crossovers where the aircraft range does differ, care should be taken comparing the along and across flow data, as the geometry and anisotropy of the ice could be responsible for the pronounced anisotropy of the deep ice unit reflectivity. We include all data for completeness however. White dashed lines in 'c' and 'd' define the boundary (200th vertical sample) between radar data SAR-processed (below line) and radar data not SAR-processed (above line). Information on SAR processing is available in Jeofry et al., (2018a).

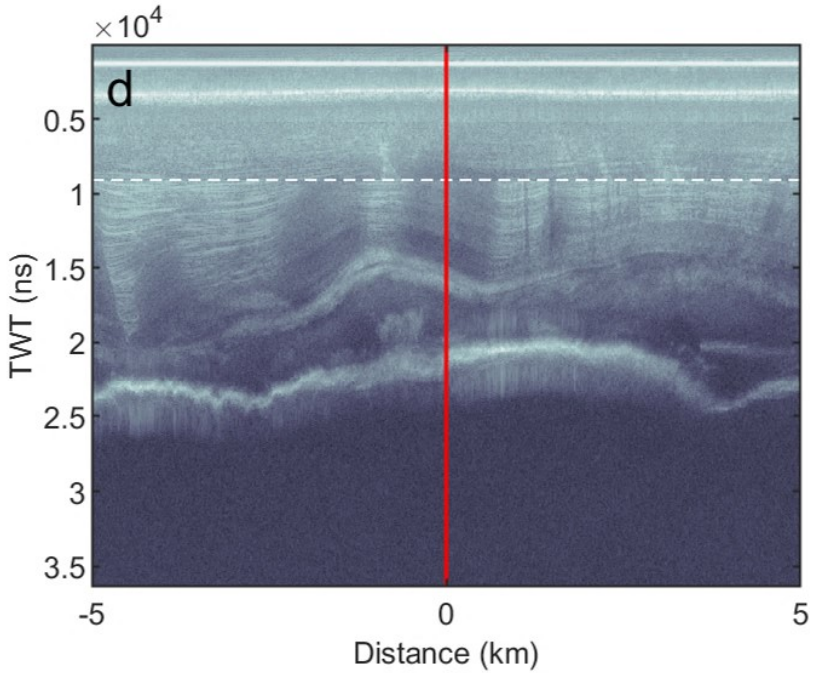

tie10acr7
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

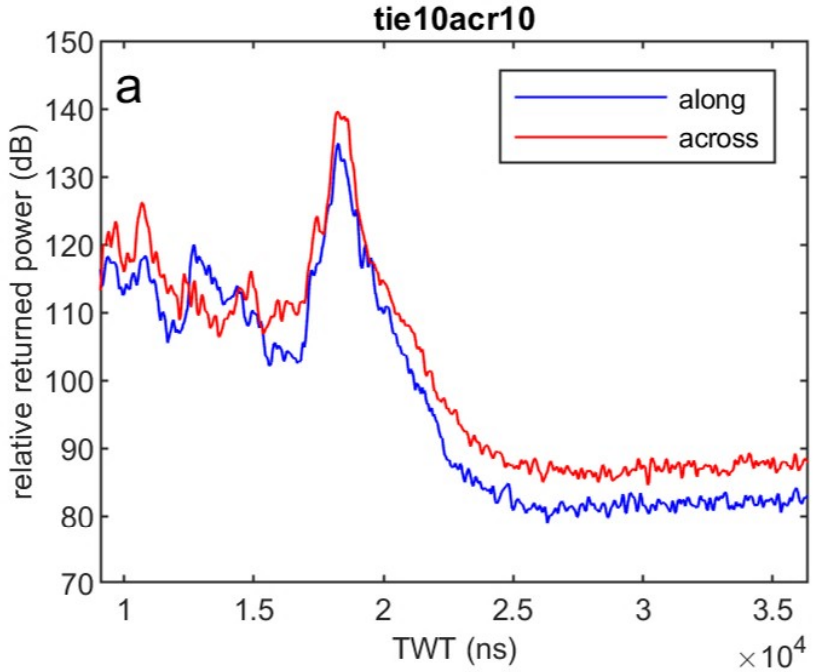

tie10acr8
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

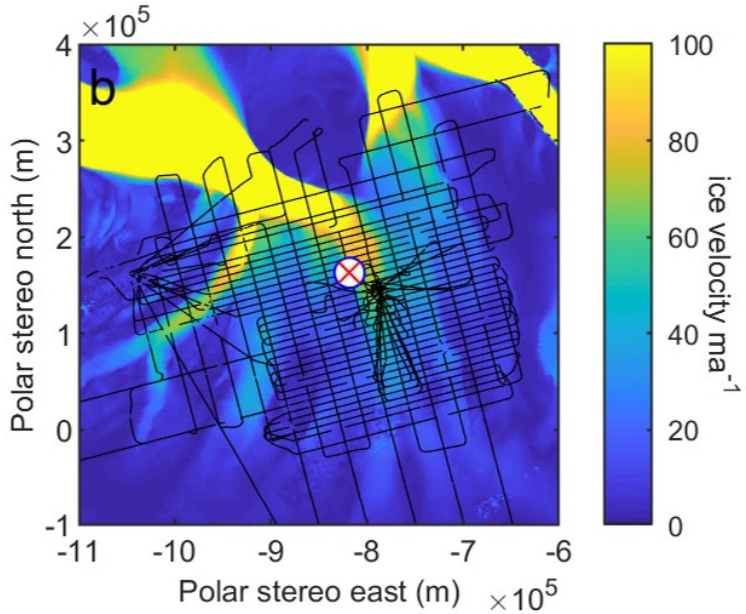

tie10acr9
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

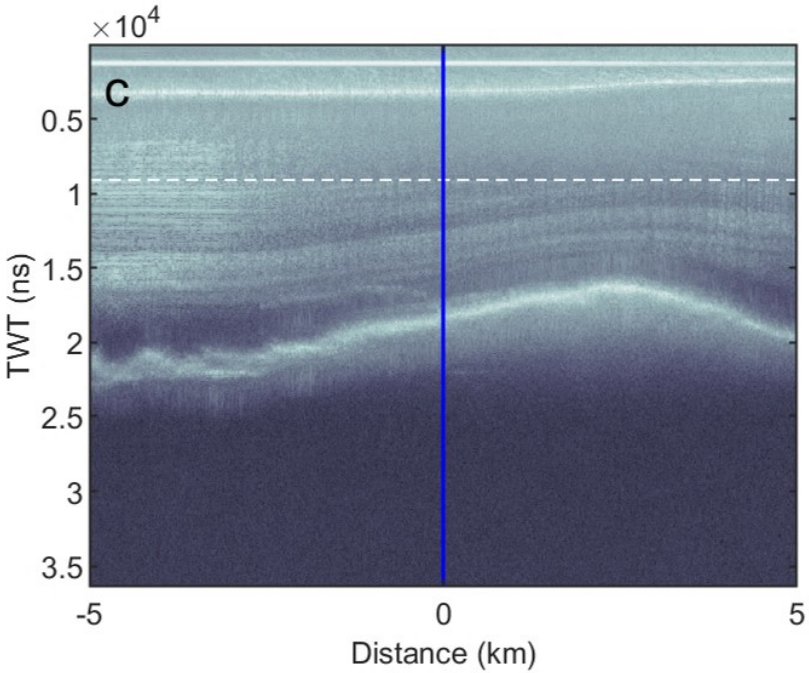

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

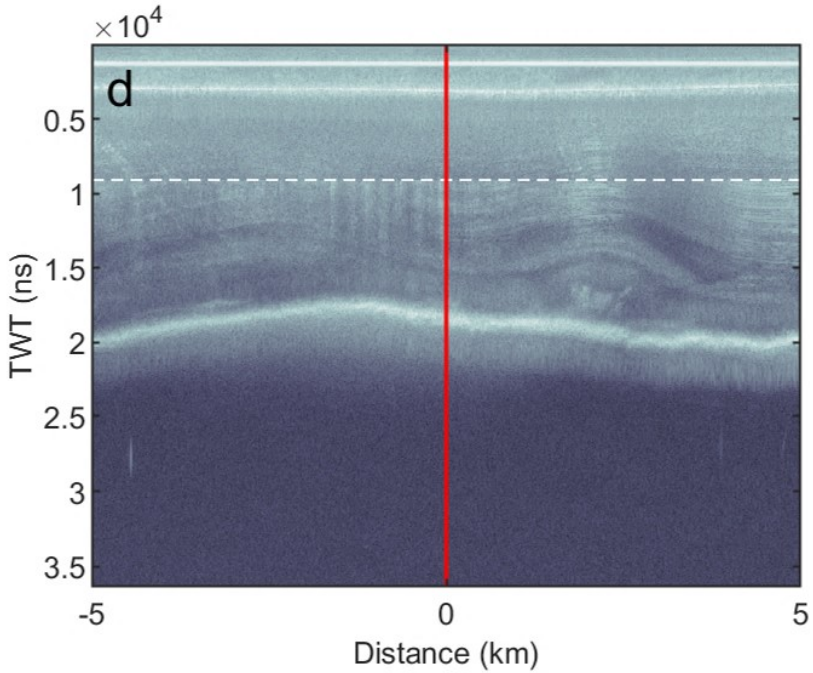

c
×10^4
TWT (ns)
Distance (km)

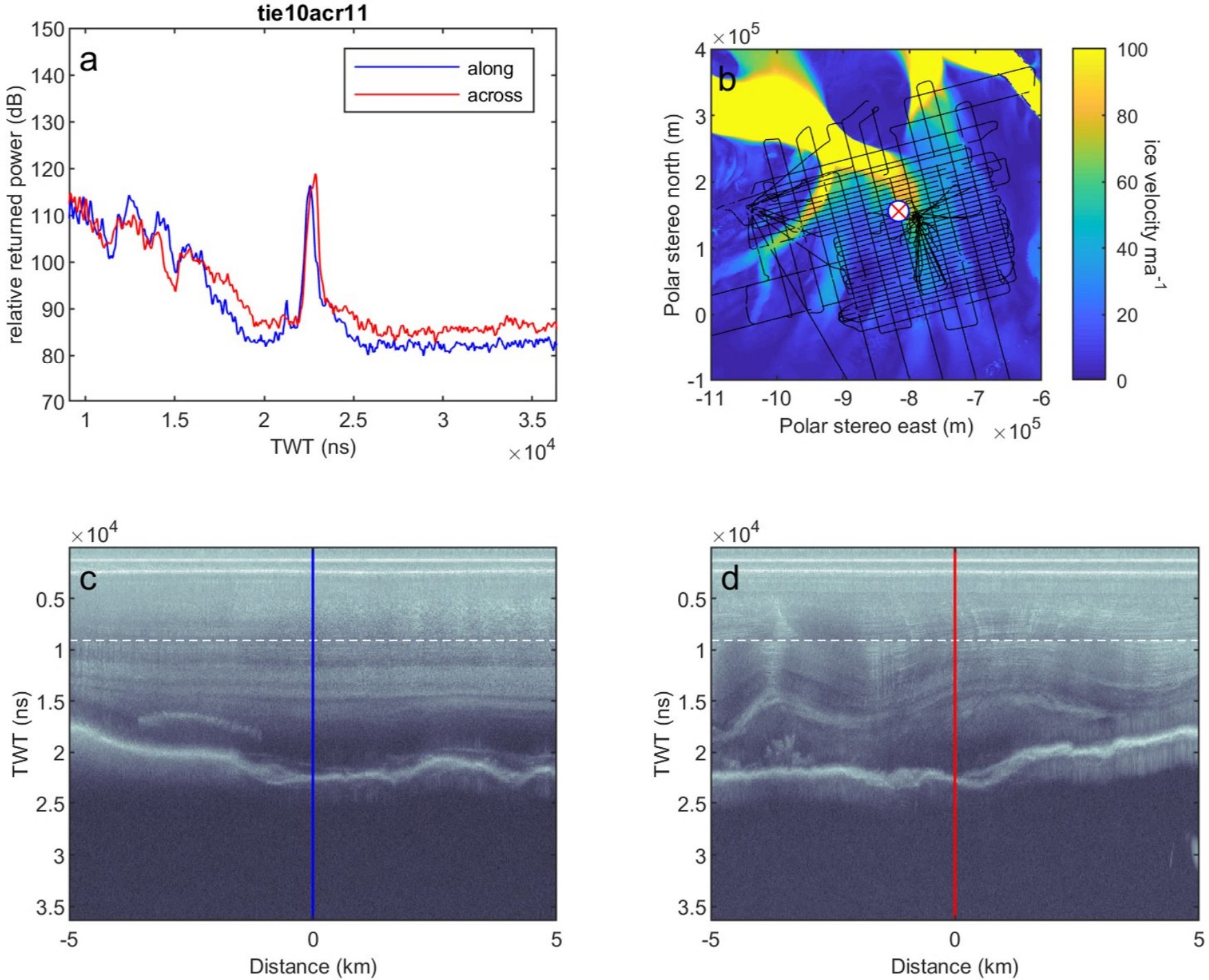

d
×10^4
TWT (ns)
Distance (km)

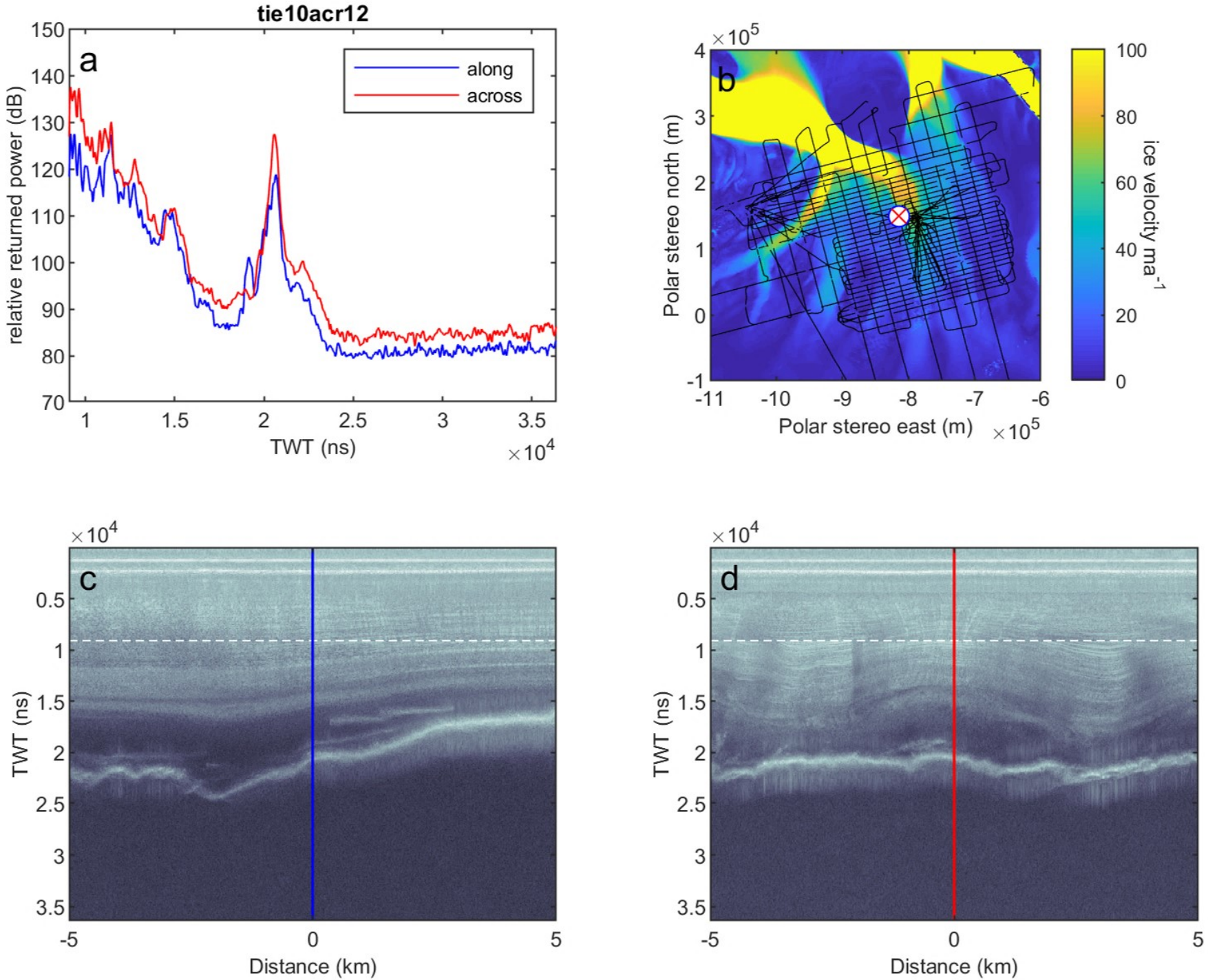

tie10acr10
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

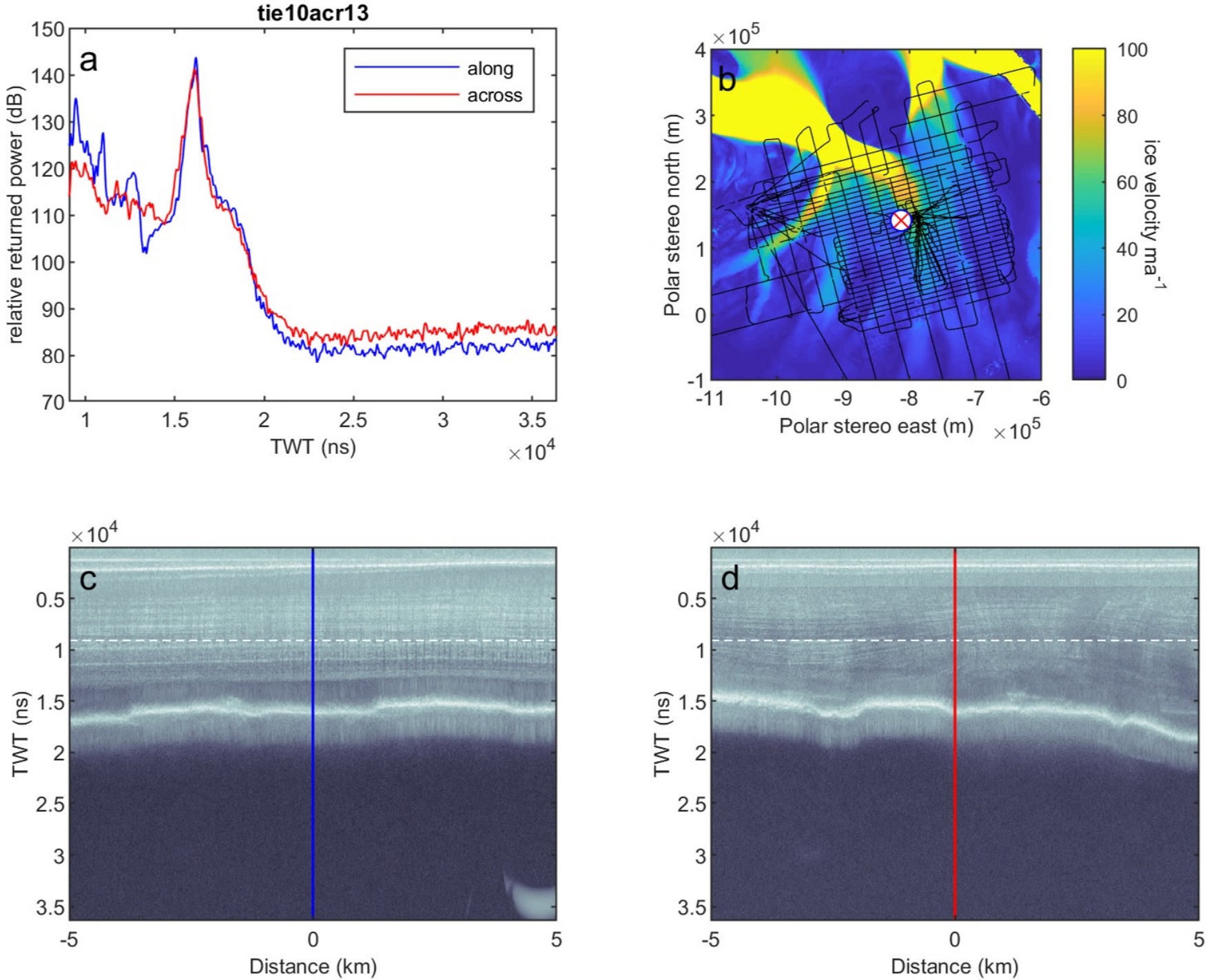

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

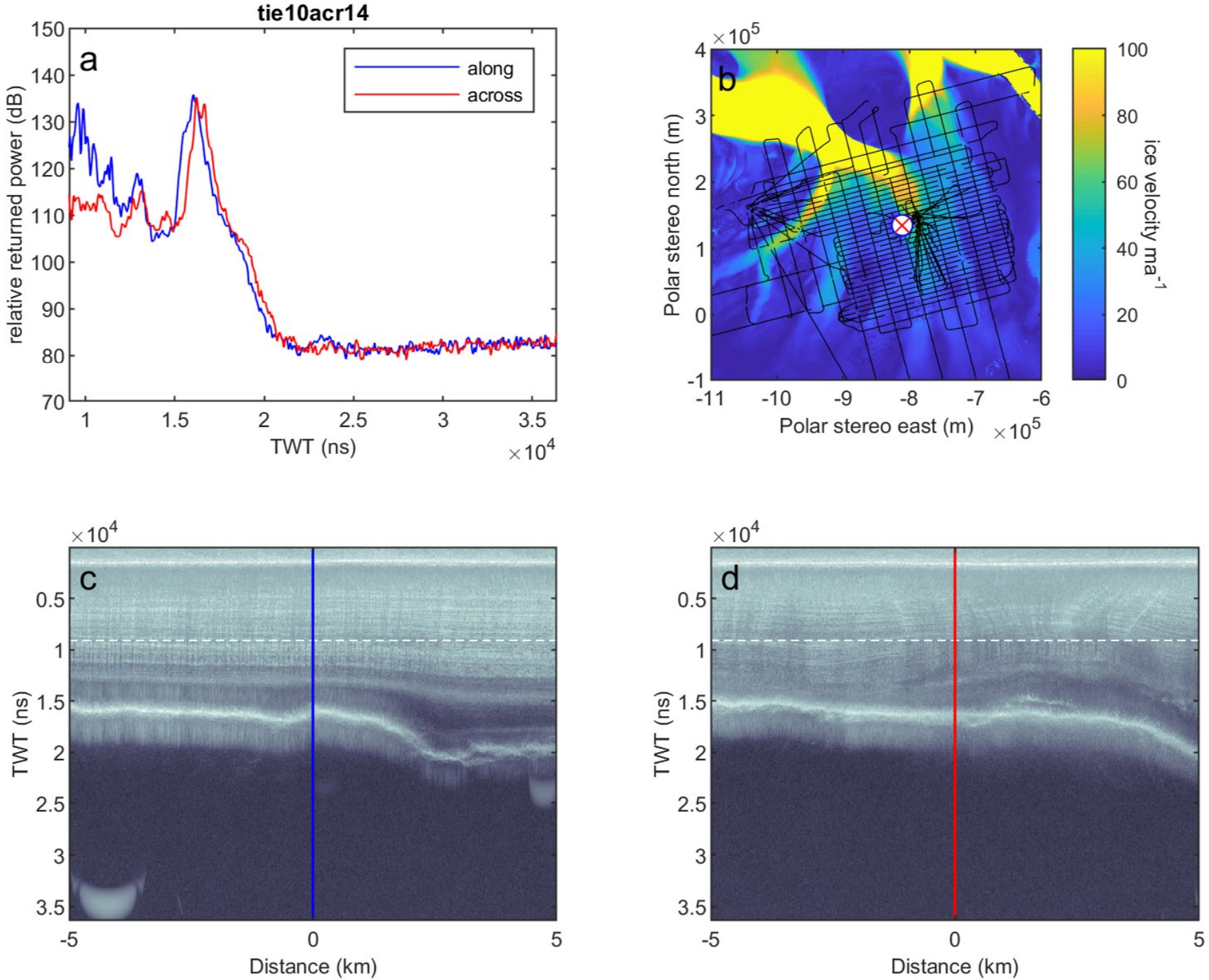

c
×10^4
TWT (ns)
Distance (km)

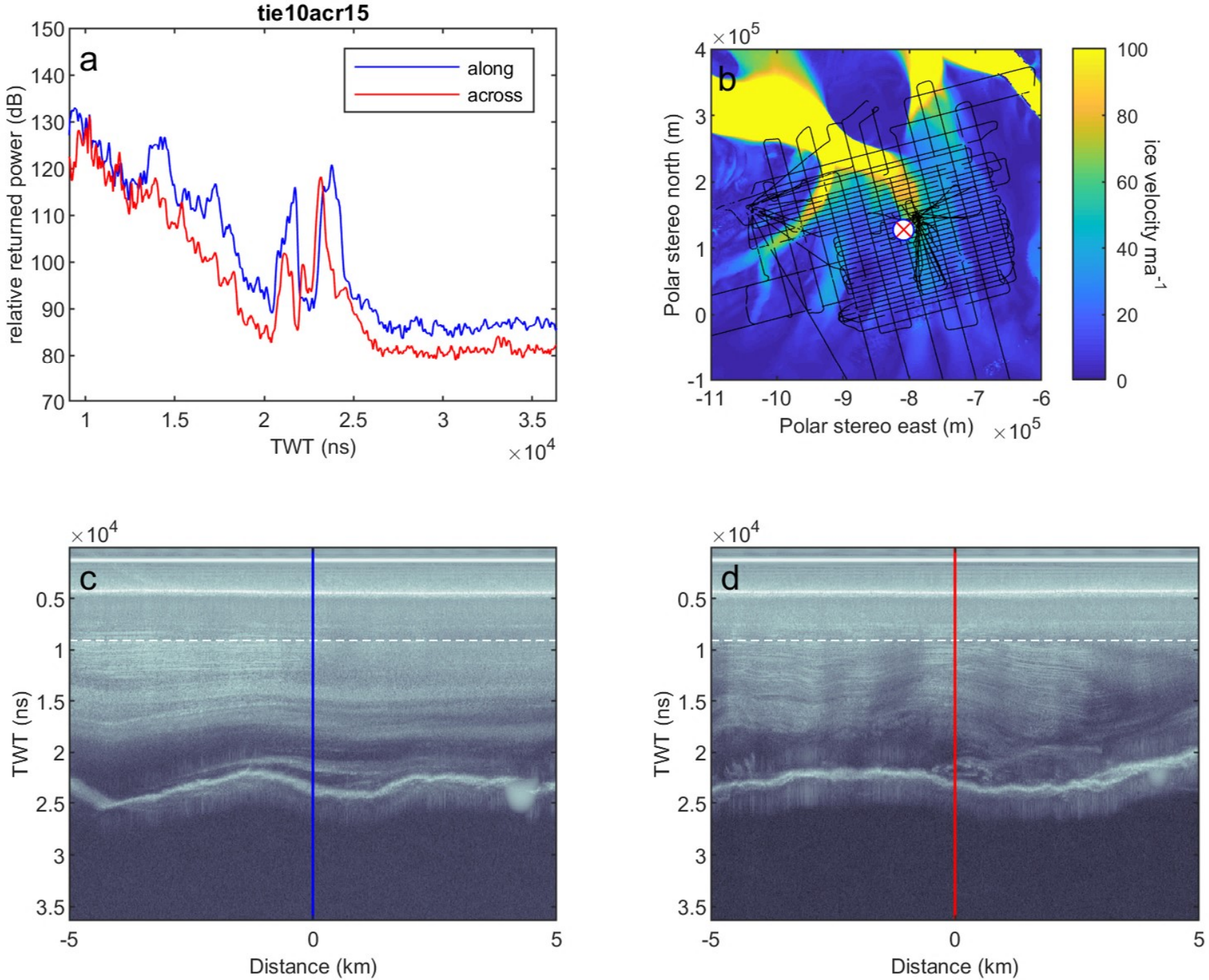

d
×10^4
TWT (ns)
Distance (km)

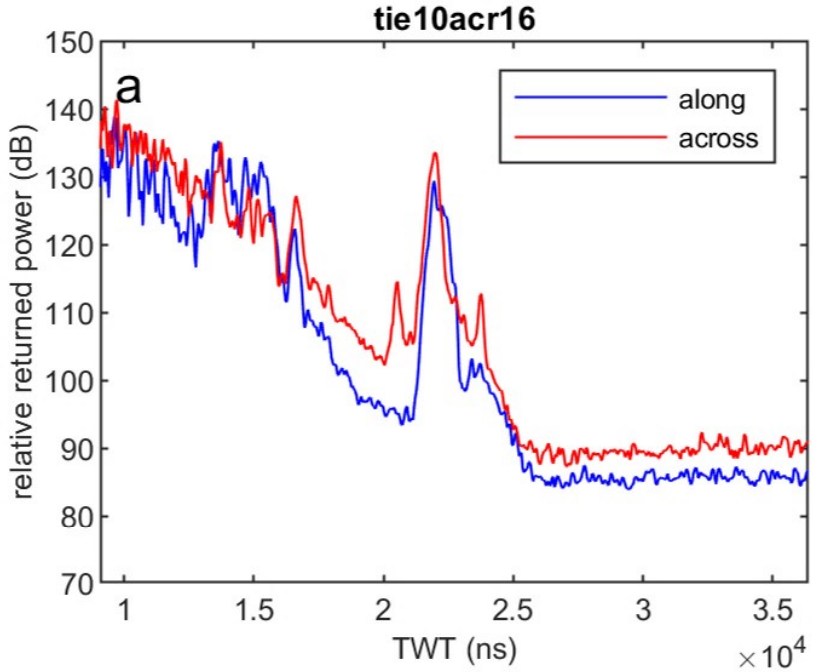

tie10acr11
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

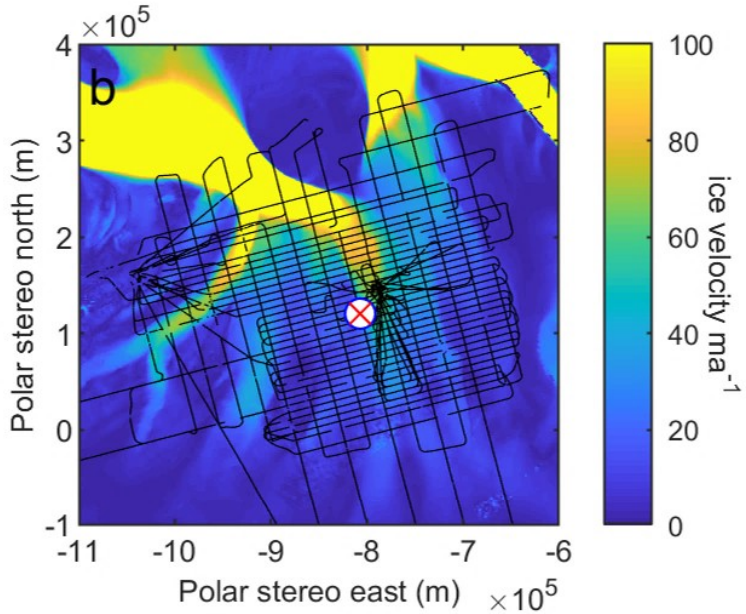

tie10acr12
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

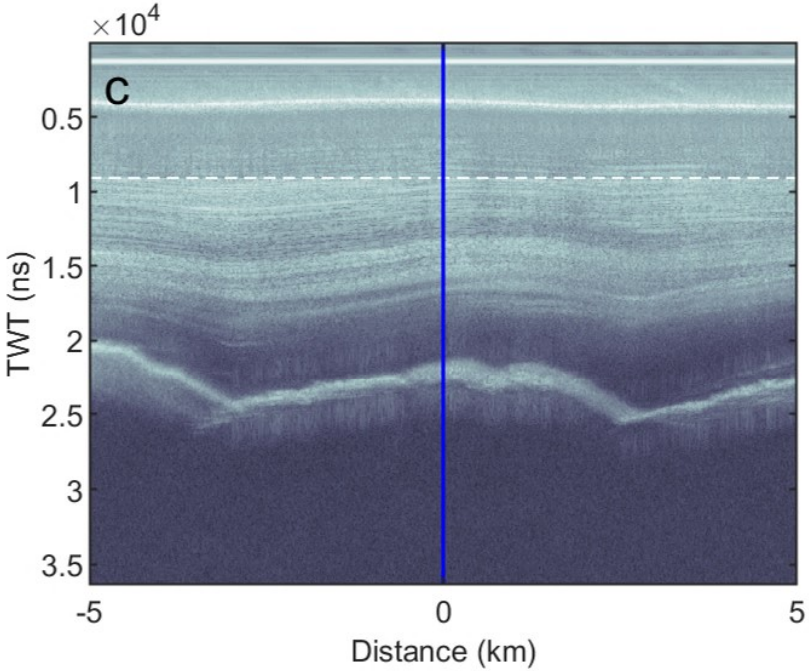

tie10acr13
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

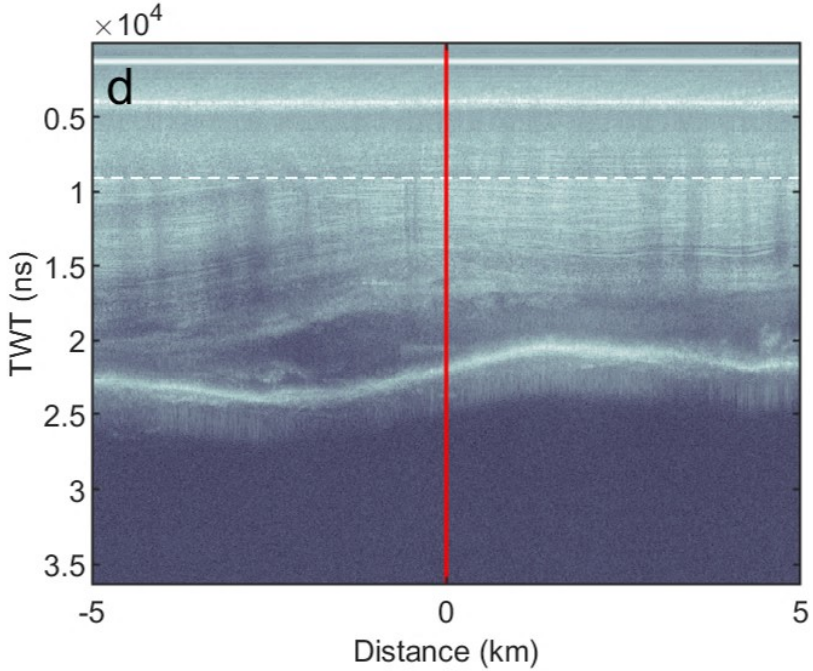

tie10acr14
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

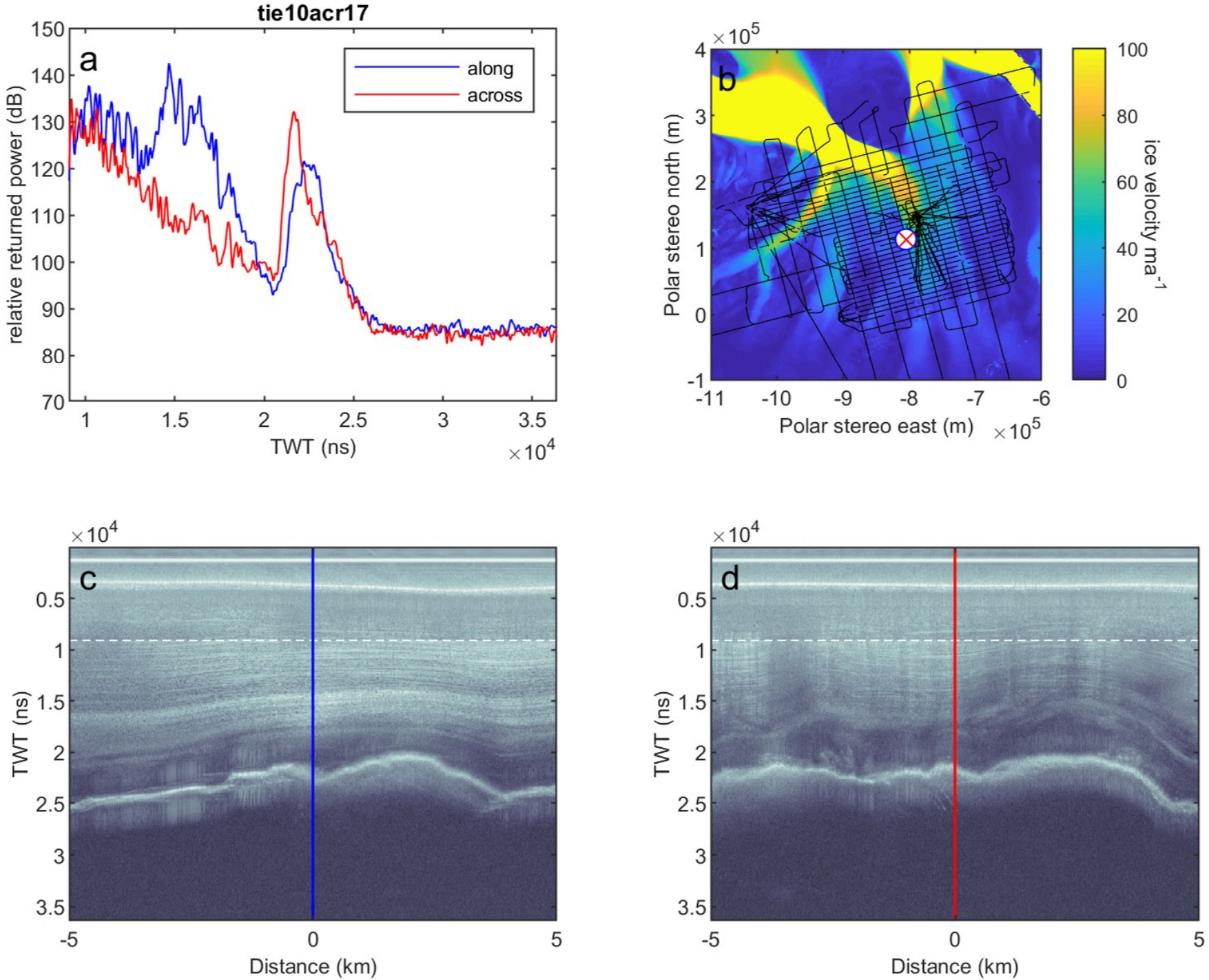

tie10acr15
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

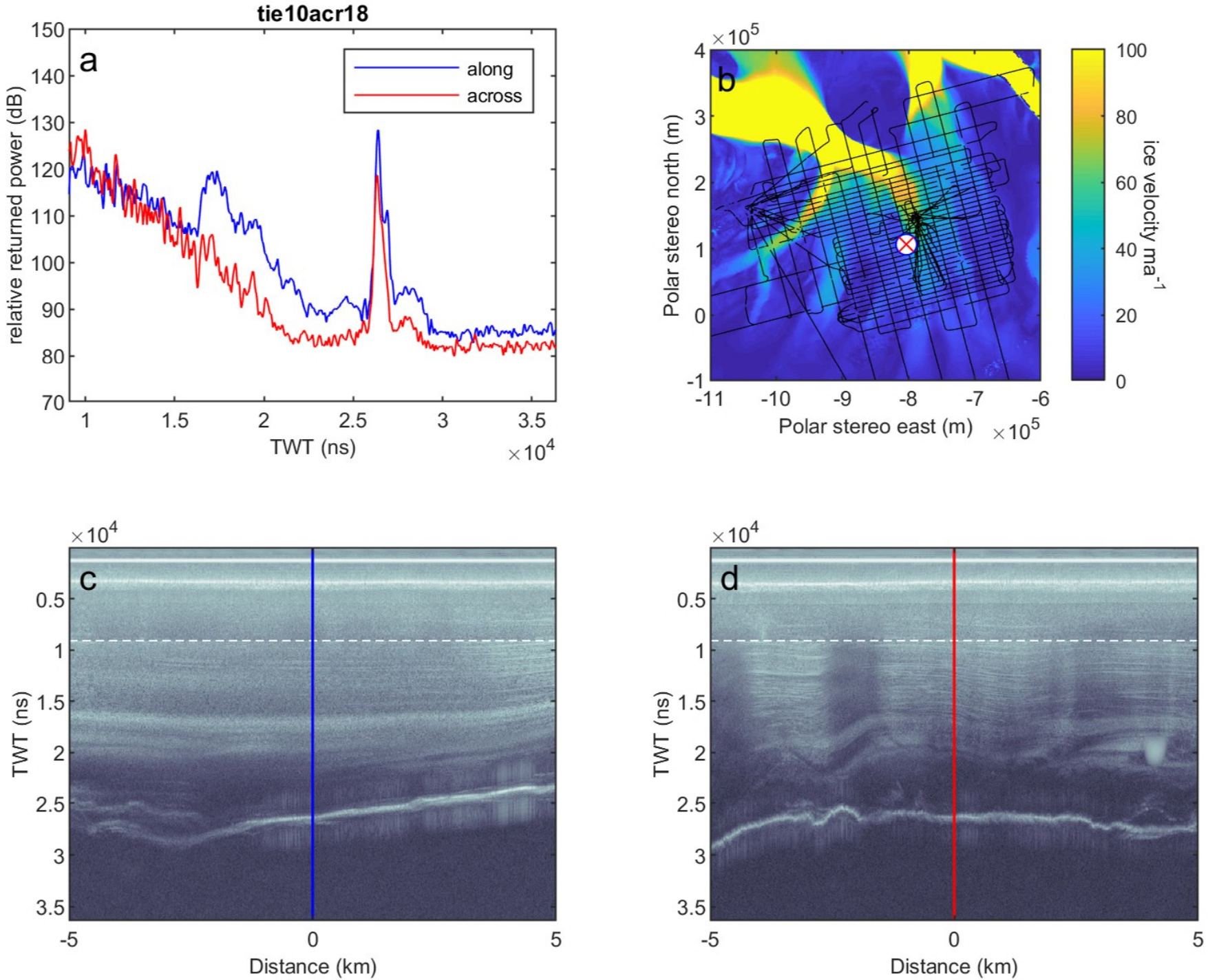

tie10acr16
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

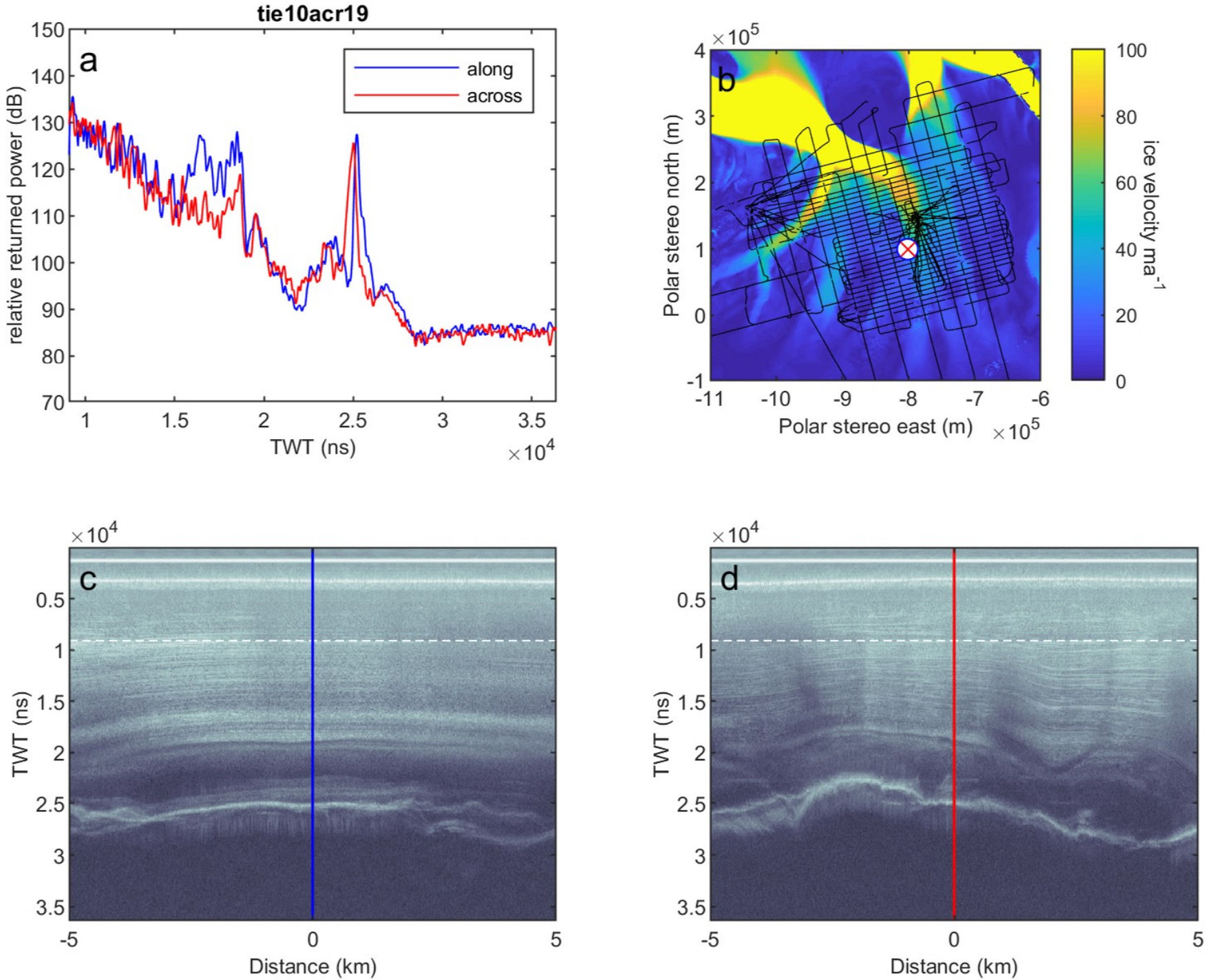

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

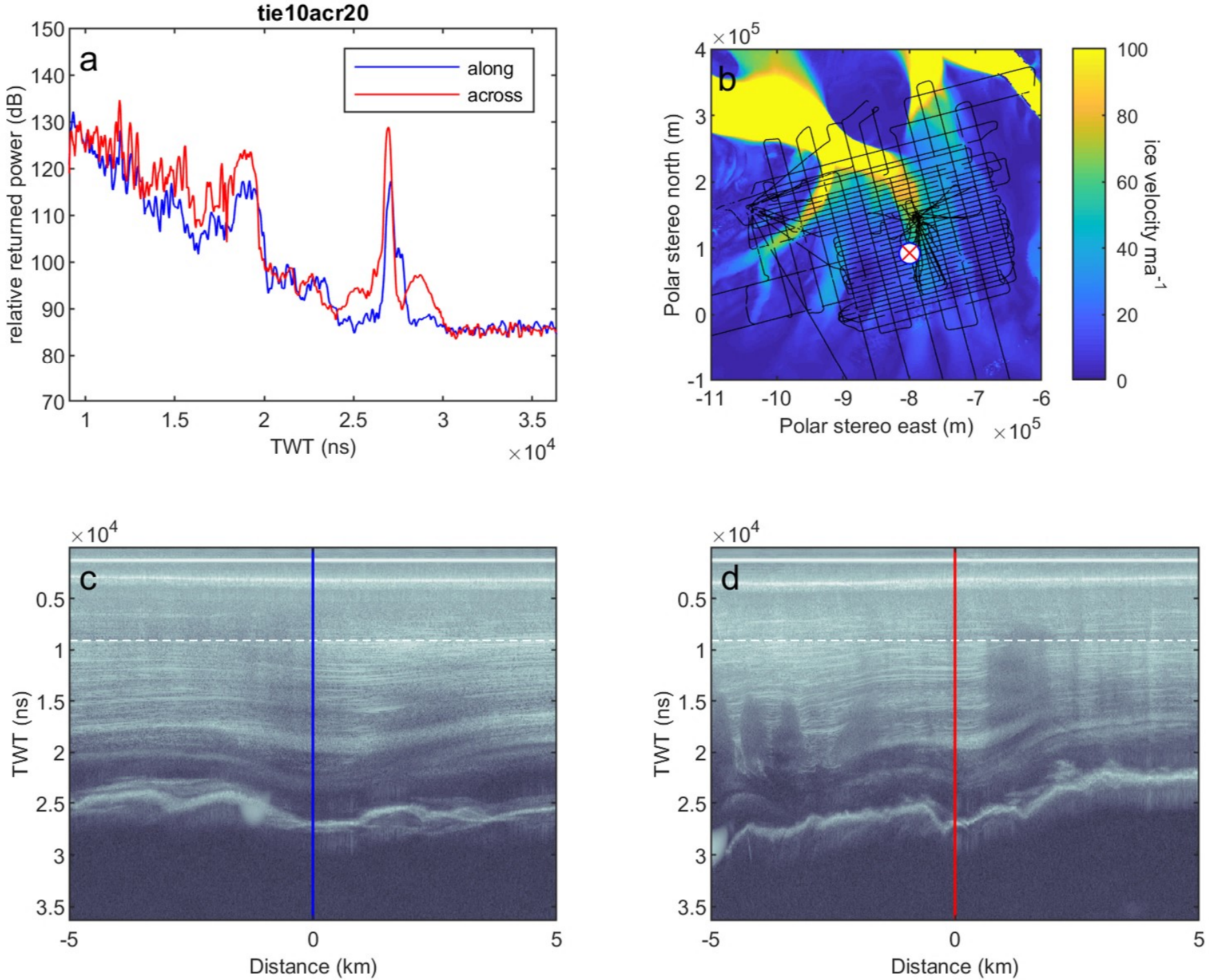

c
×10^4
TWT (ns)
Distance (km)

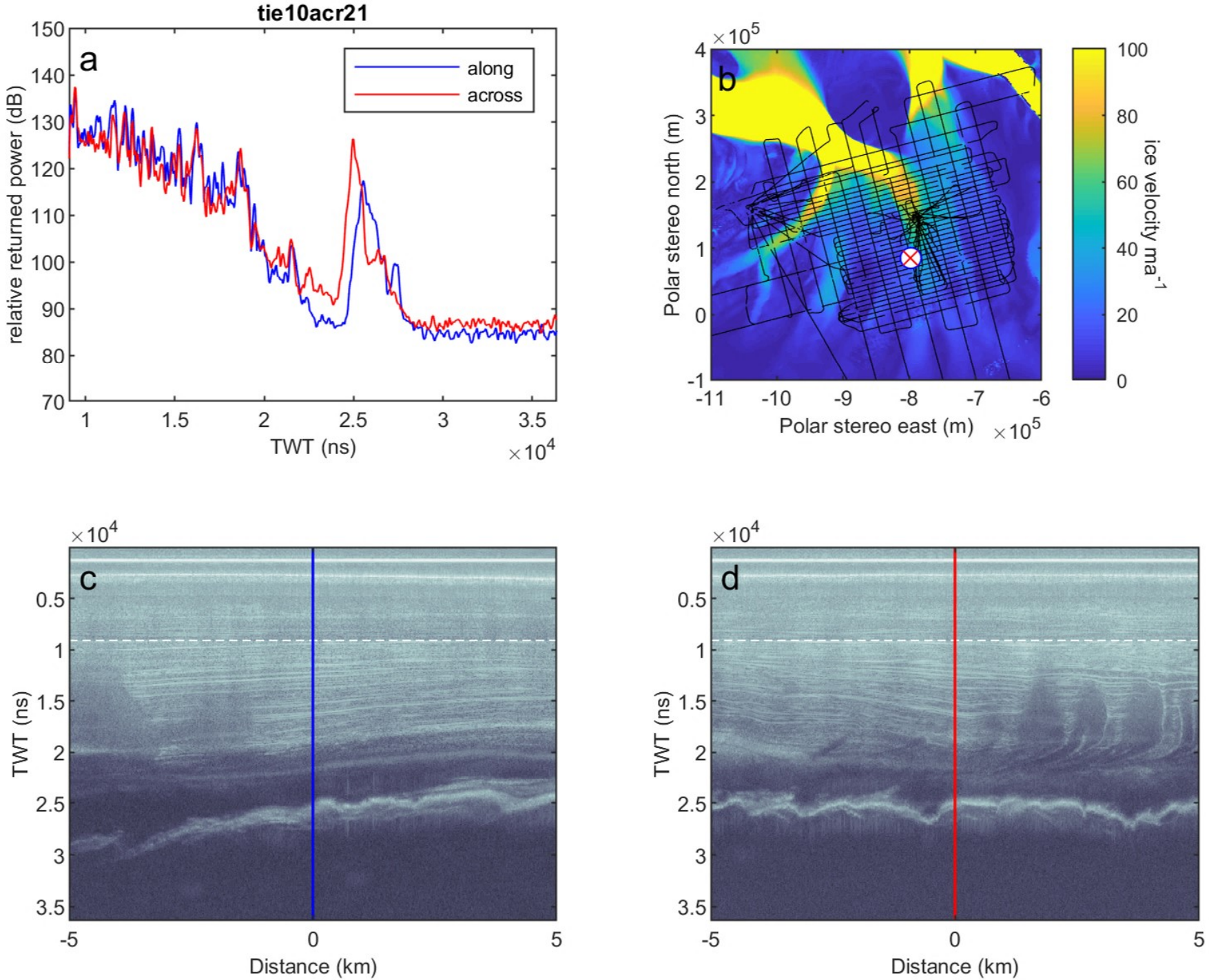

d
×10^4
TWT (ns)
Distance (km)

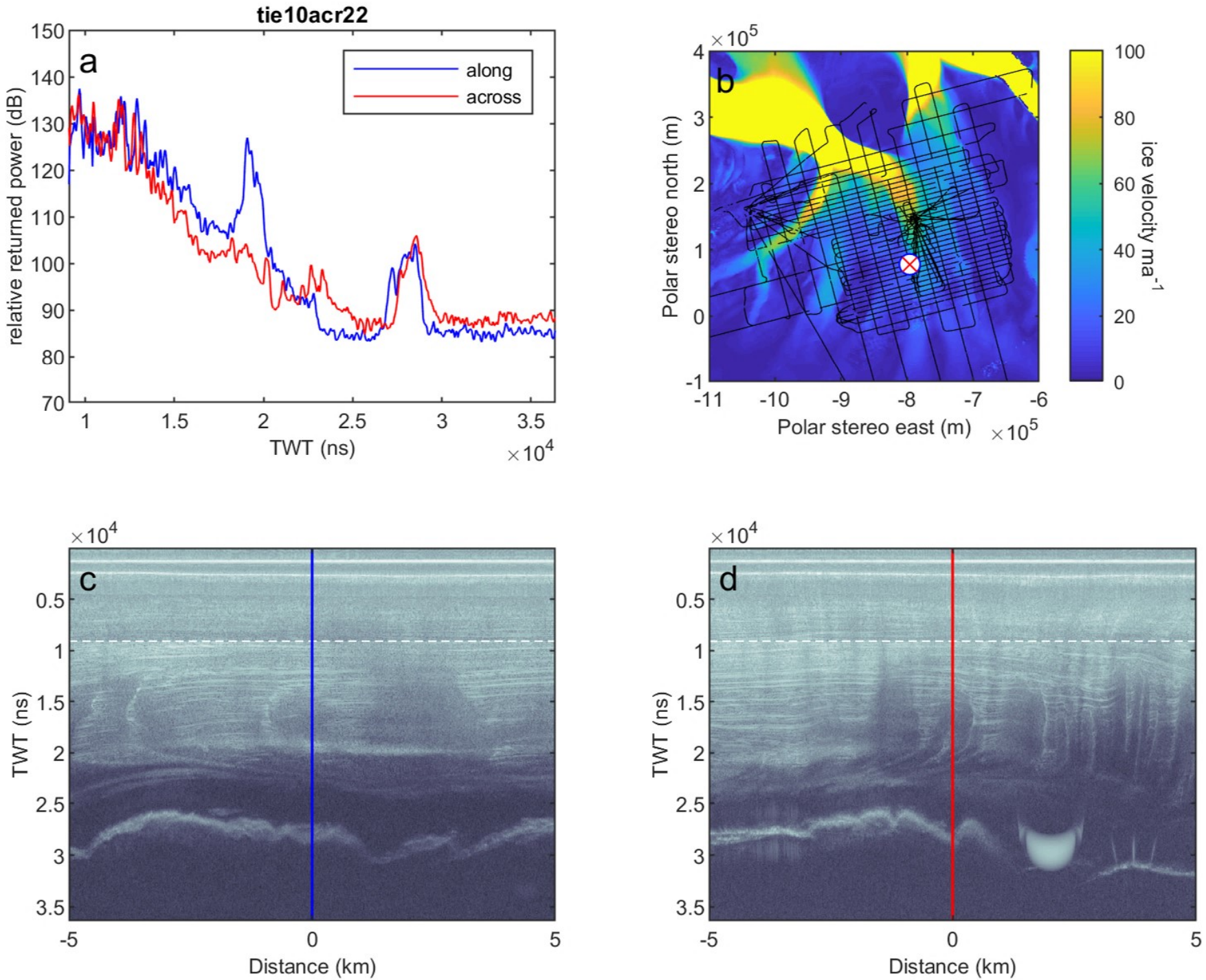

tie10acr17
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

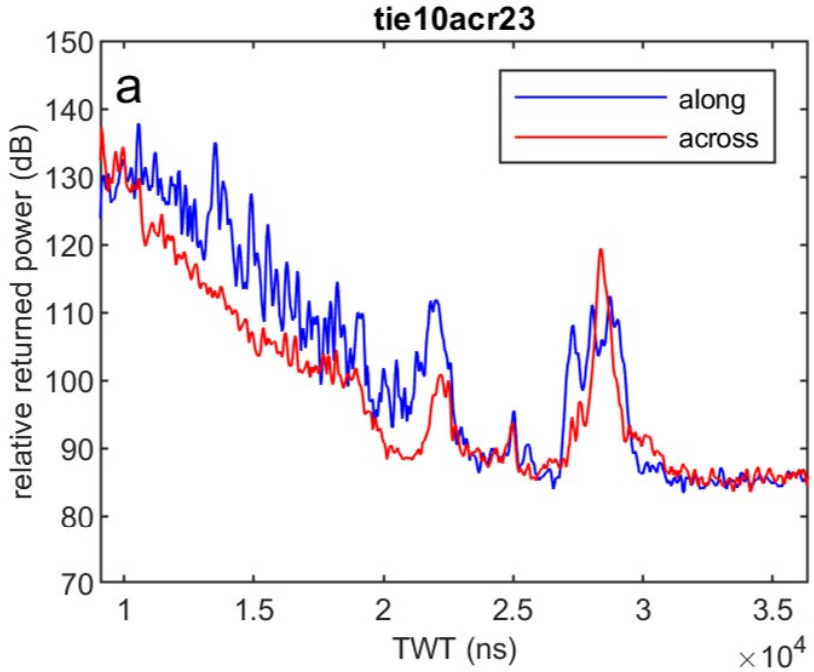

tie10acr18
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

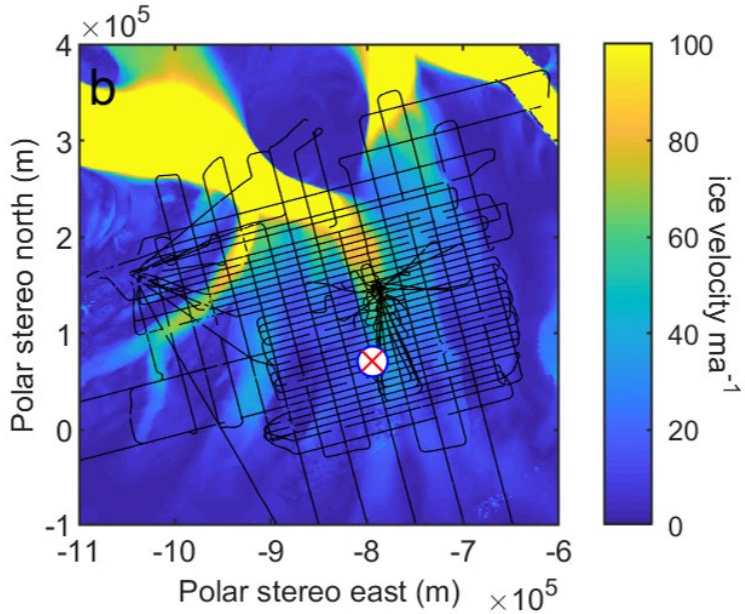

tie10acr19
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

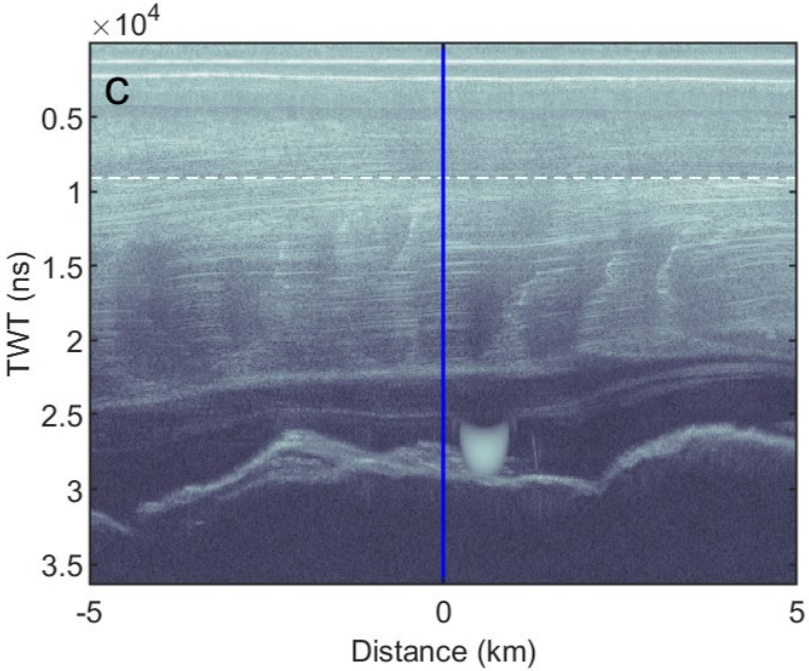

tie10acr20
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

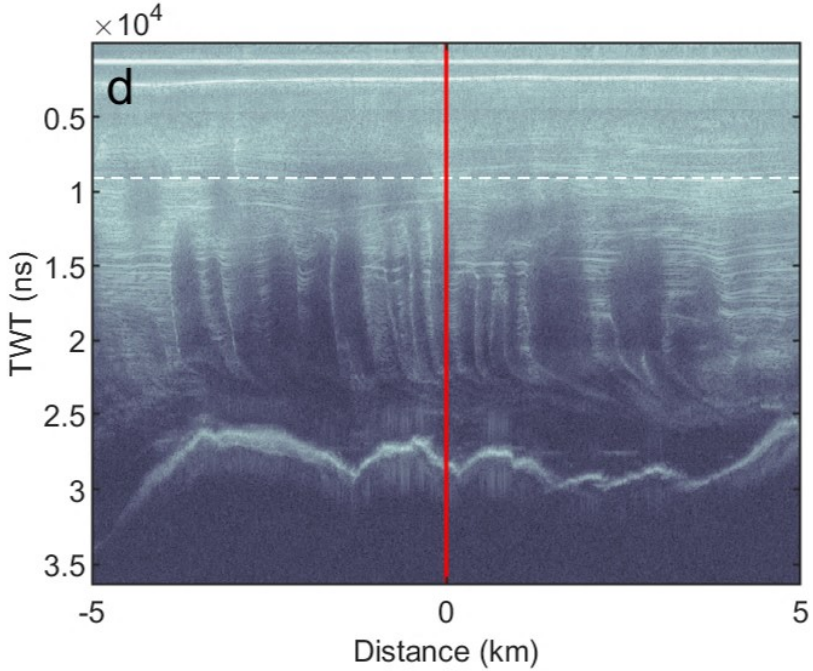

tie10acr21
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

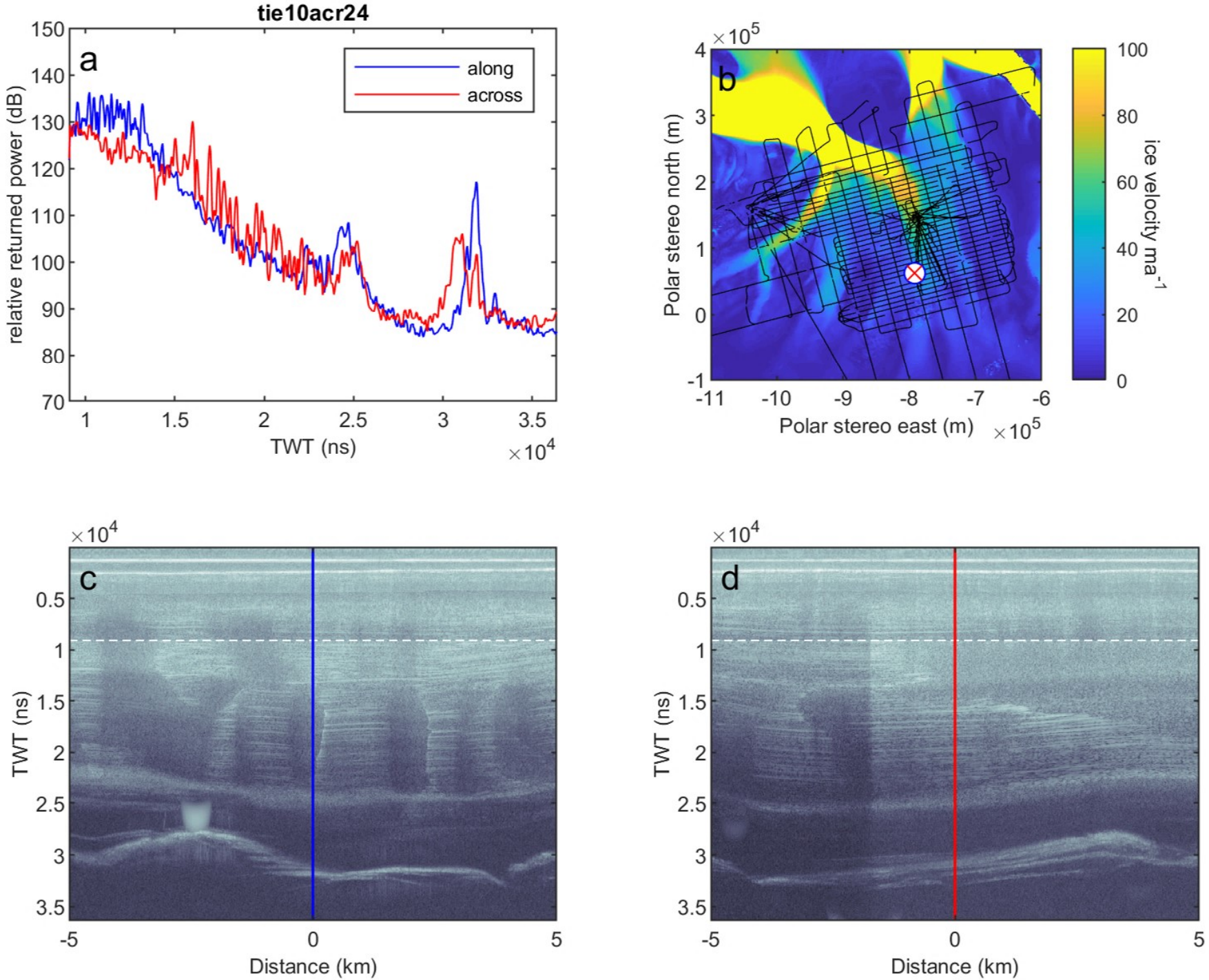

tie10acr22
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)


tie10acr23
a
along
across
relative returned power (dB)
TWT (ns)
×10^4


b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

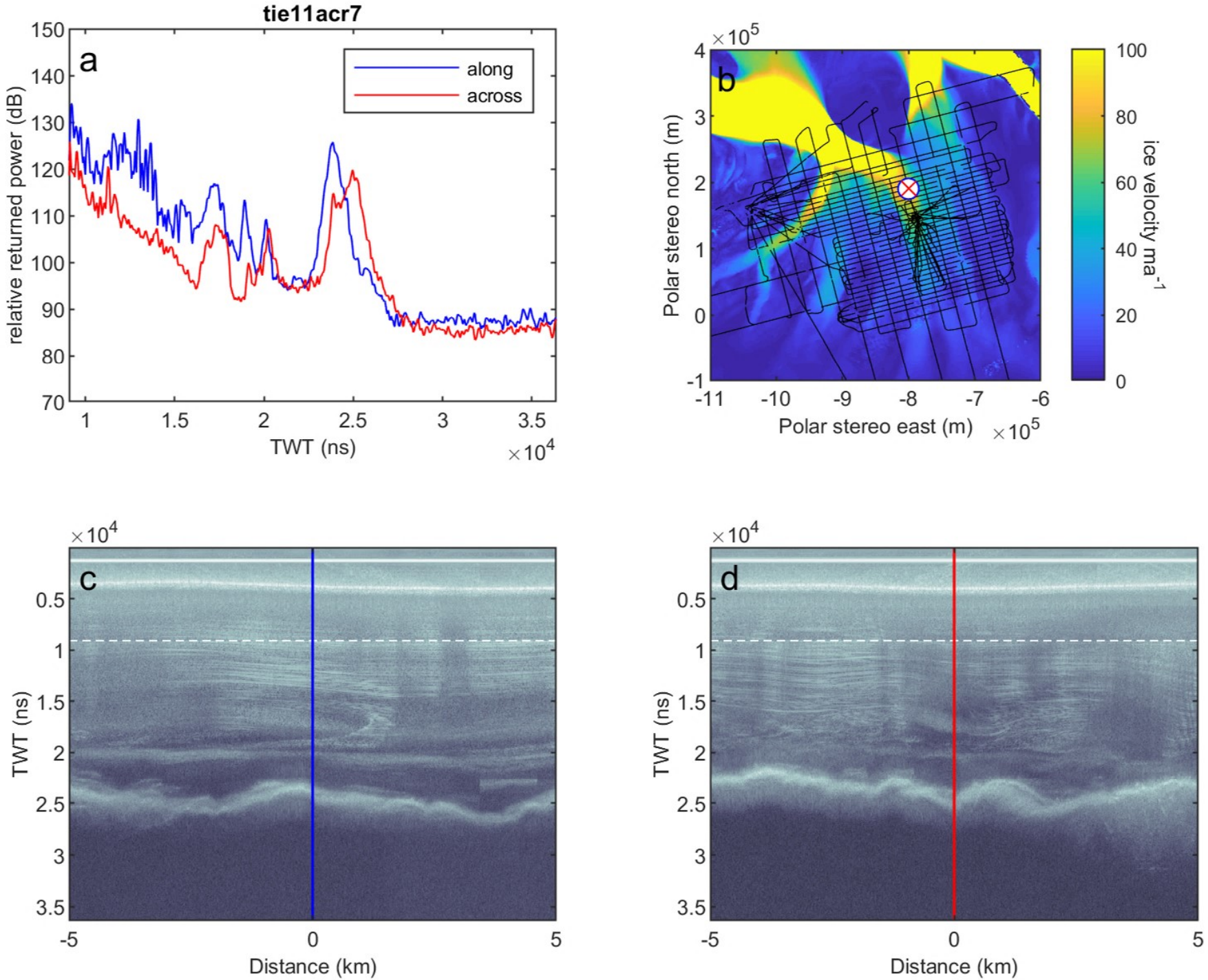

c
×10^4
TWT (ns)
Distance (km)

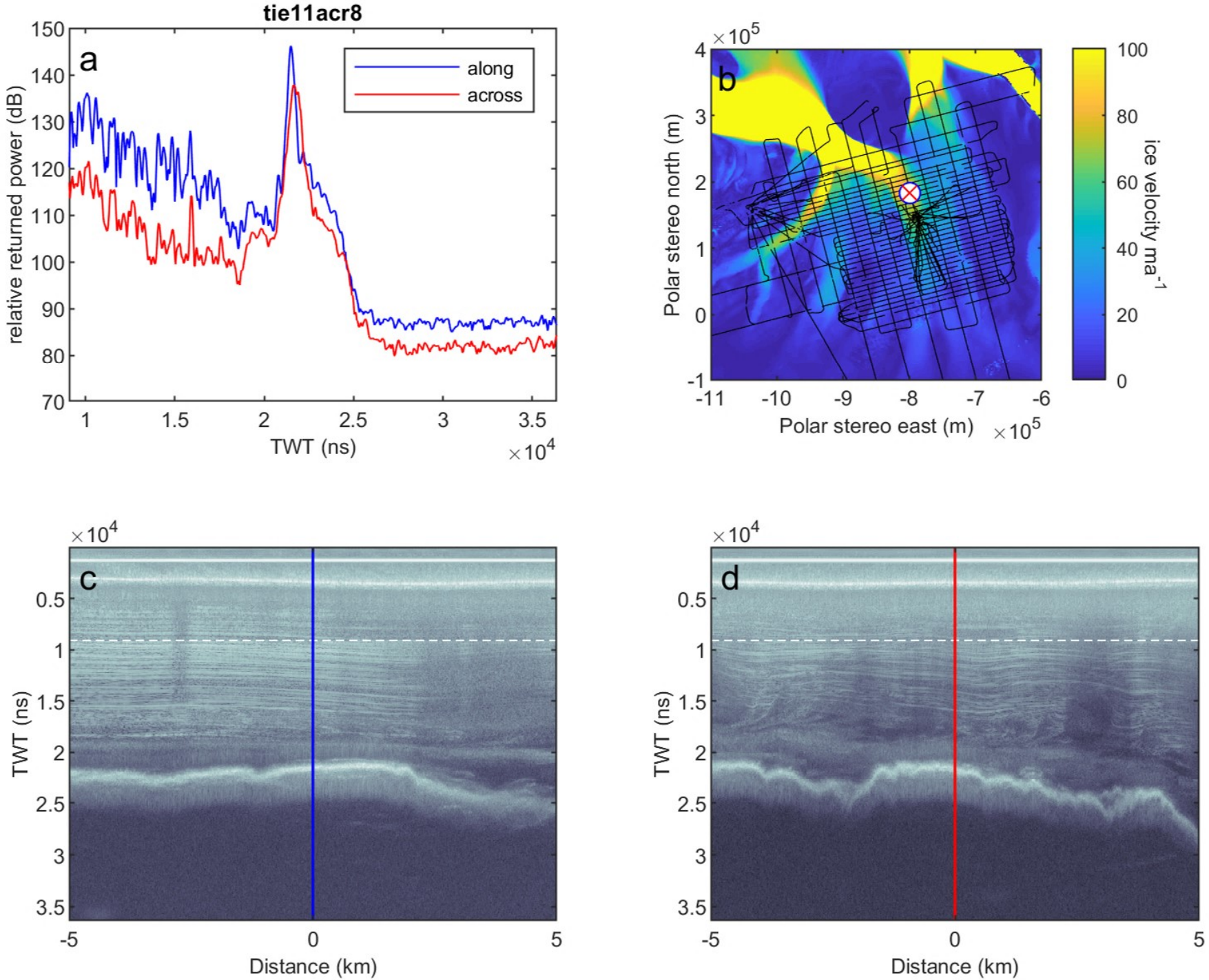

d
×10^4
TWT (ns)
Distance (km)

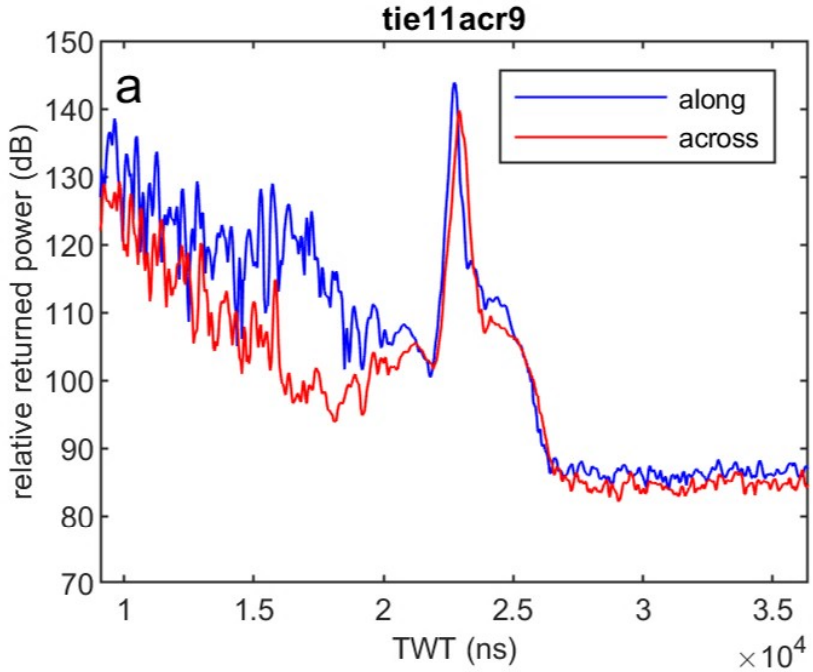

tie10acr24
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

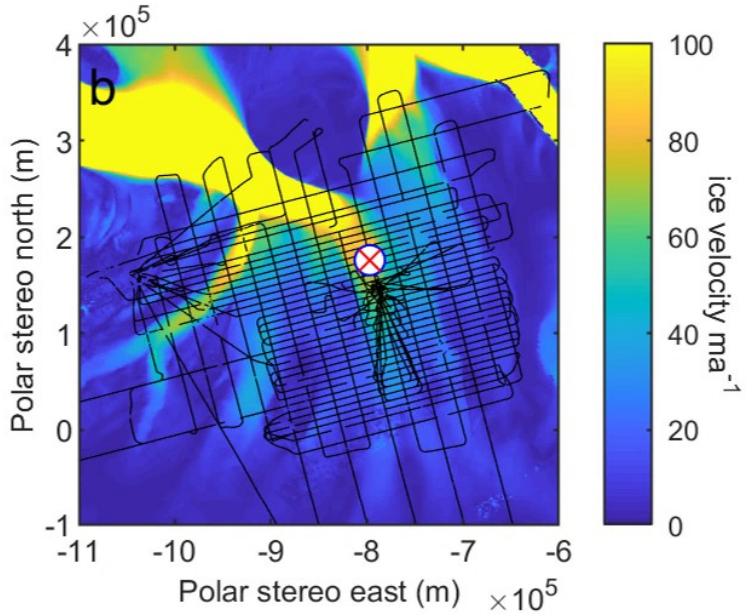
Supplementary Figure 3

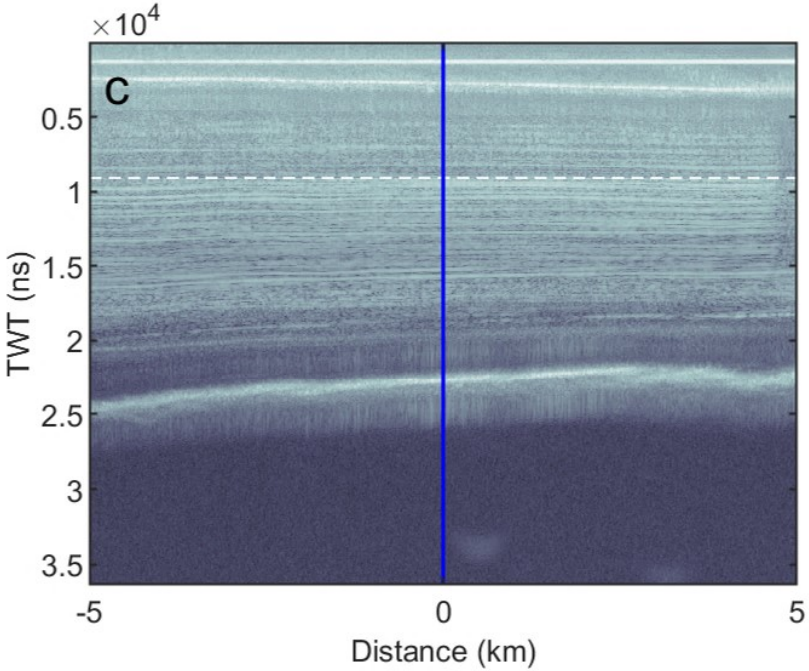
PDF files of crossovers within a subset of the IMAFI survey grid (tie line 11, across lines 7-24), over the area of the IIS characterized by the large-scale englacial folding: (a) relative returned power (dB) for eleven stacked 2D SAR processed traces (~100 m of radar data) along (blue) and across (red) ice flow; (b) location of radar data crossover (red cross with white filled circle), underlain by radar survey grid (thin black lines) and ice velocity (Mouginot et al., 2019), with colour scale saturated at 100 ma^{-1}. (c) radar data along ice flow. Cross-over with across ice flow radar data (see 'd') shown with blue vertical line. Blue profile in 'a' is the returned power of the crossover trace stacked with 5 traces either side; (d) radar data across ice flow. Cross-over with along ice flow radar data 'c' shown with red vertical line. Red profile in 'a' is the returned power of the crossover trace stacked with 5 traces either side. It is important to note that in these examples, unlike the one given in Figure 6, not all the along and across flow radar data were acquired at the crossover location with the same aircraft altitude, and therefore the same range to ice surface. At the crossovers where the aircraft range does differ (i.e. tie11acr11-15– where the ice surface and bed reflections are clearly offset to each other), care should be taken comparing the along and across flow data, as the geometry and anisotropy of the ice could be responsible for the pronounced anisotropy of the deep ice unit reflectivity. We include all data for completeness however. White dashed lines in 'c' and 'd' define the boundary (200th vertical sample) between radar data SAR-processed (below line) and radar data not SAR-processed (above line). Information on SAR processing is available in Jeofry et al., (2018a).

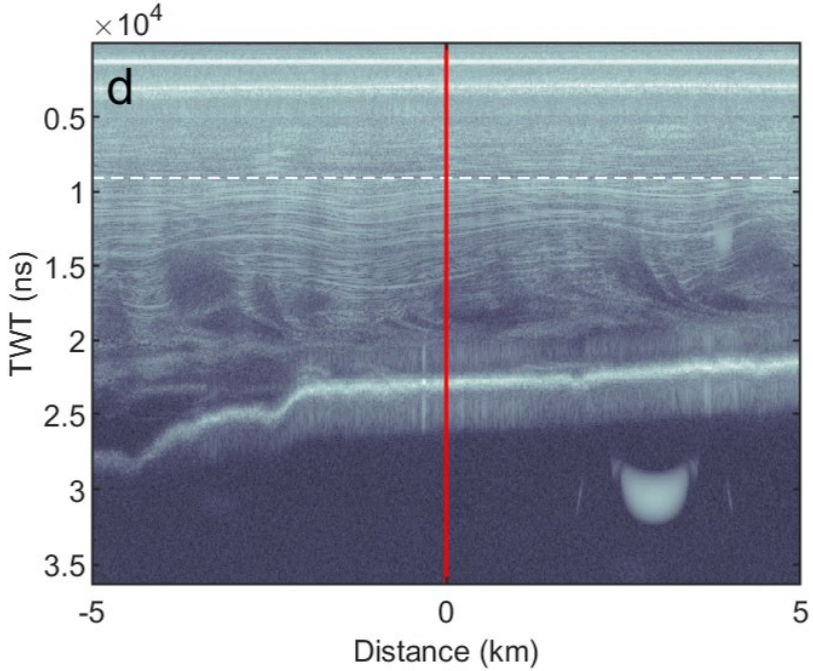

tie11acr7
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

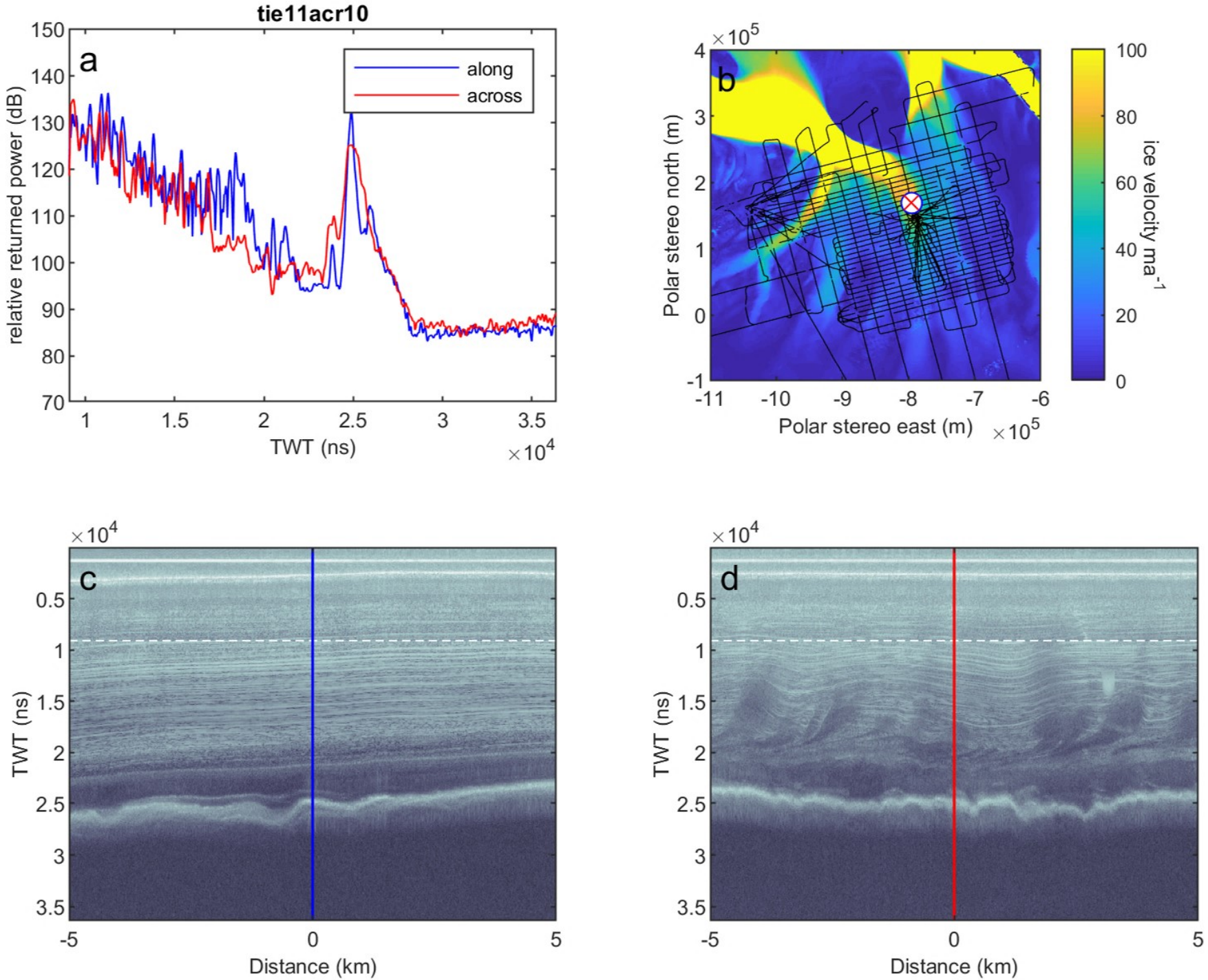

tie11acr8
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

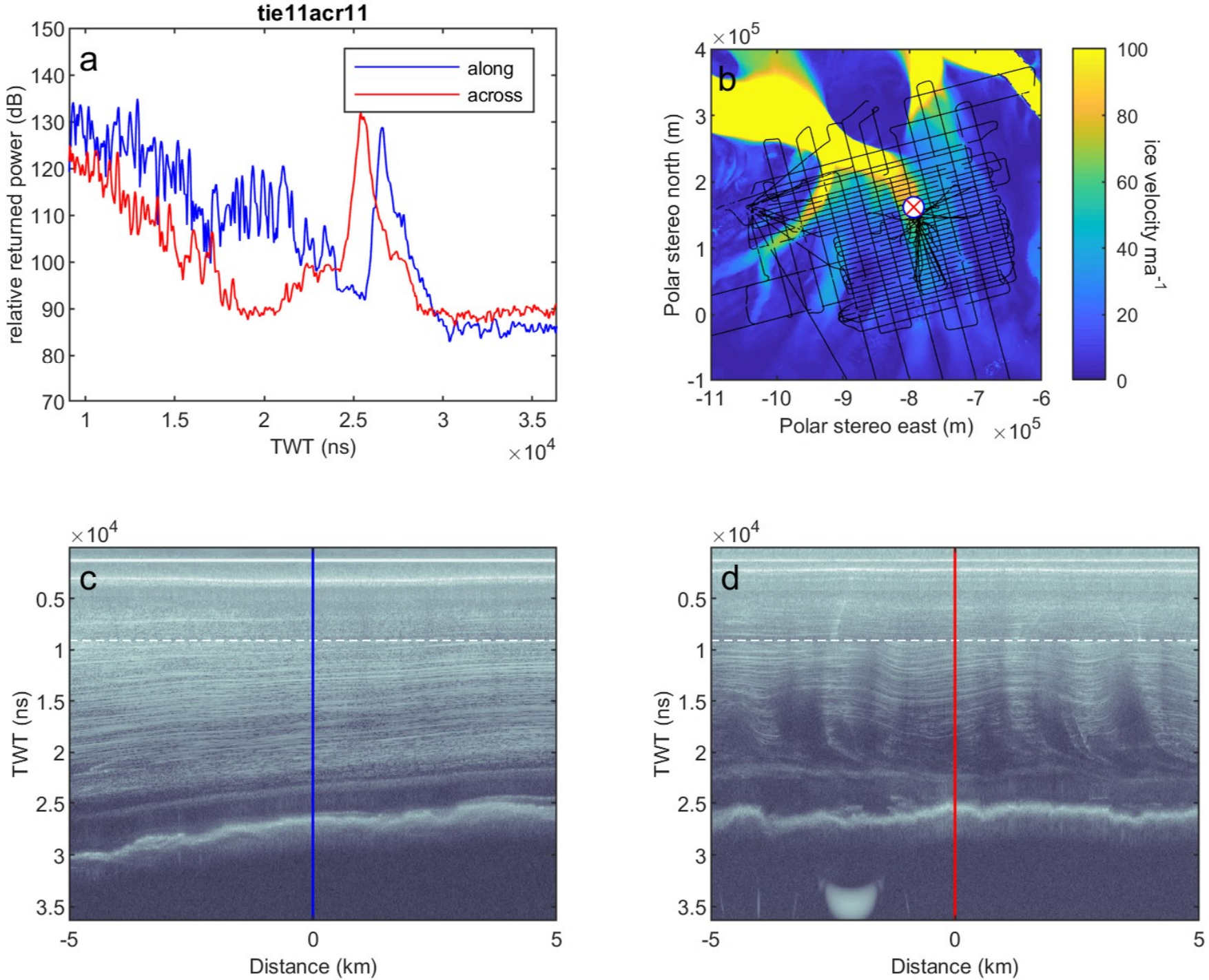

tie11acr9
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

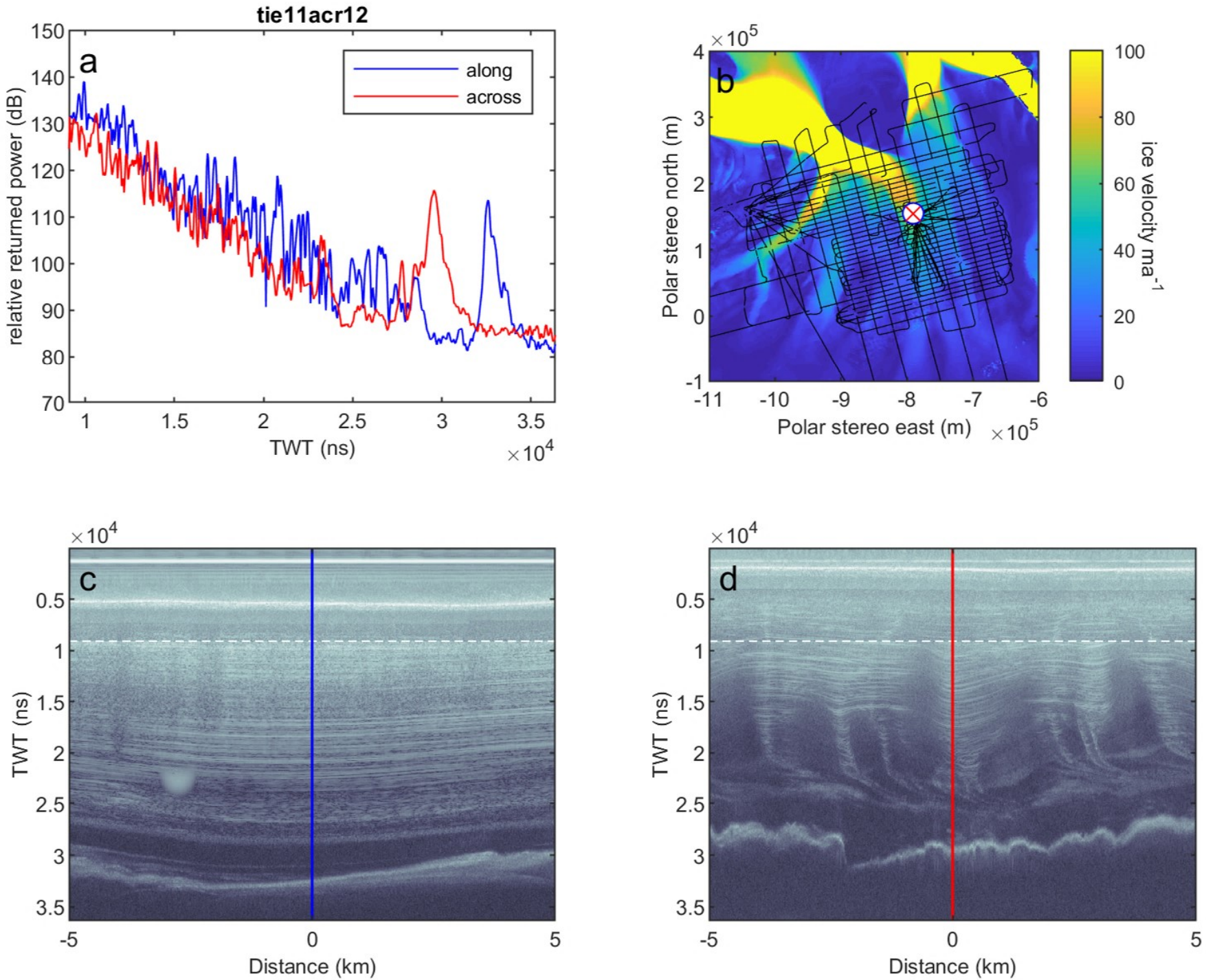

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

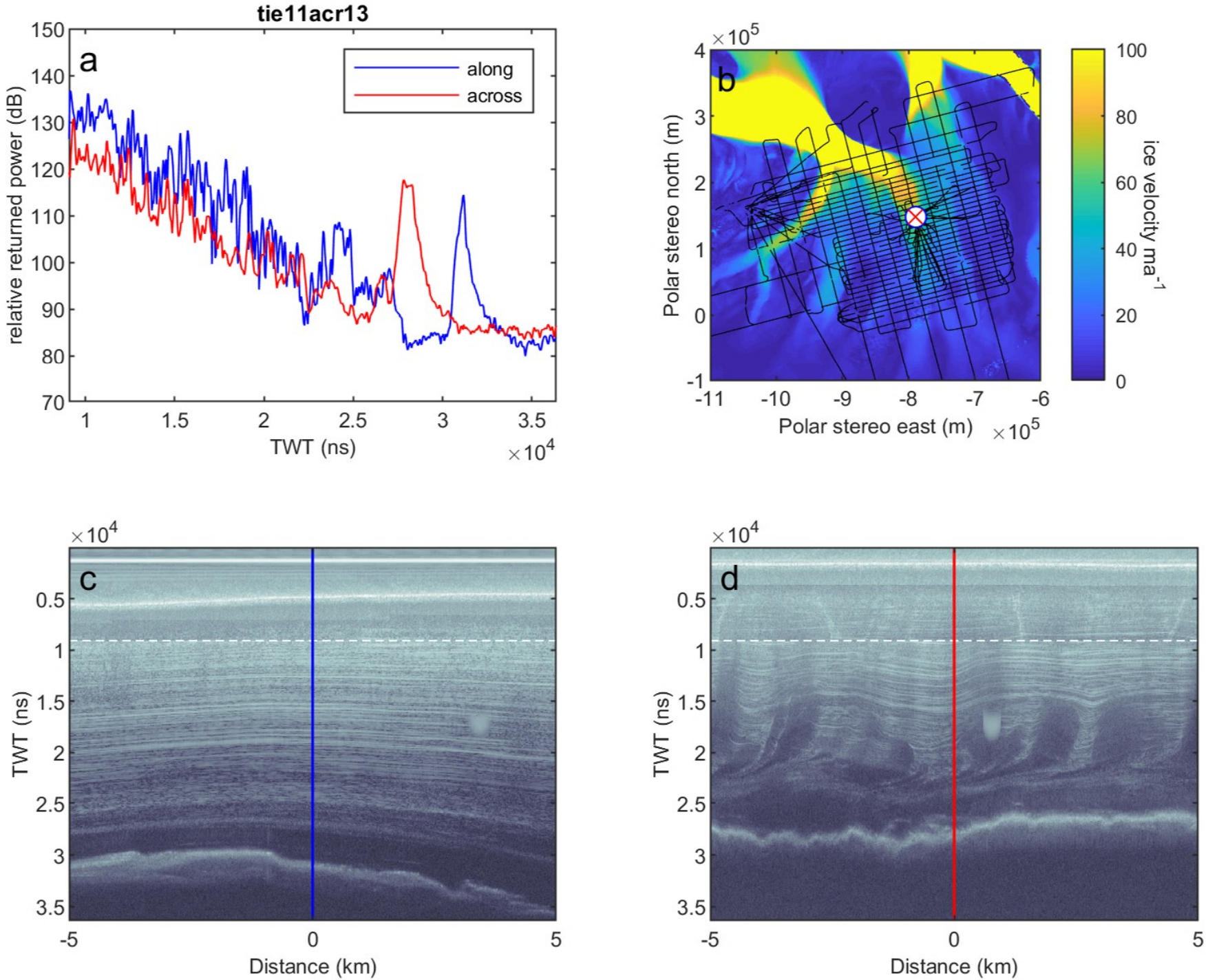

c
×10^4
TWT (ns)
Distance (km)

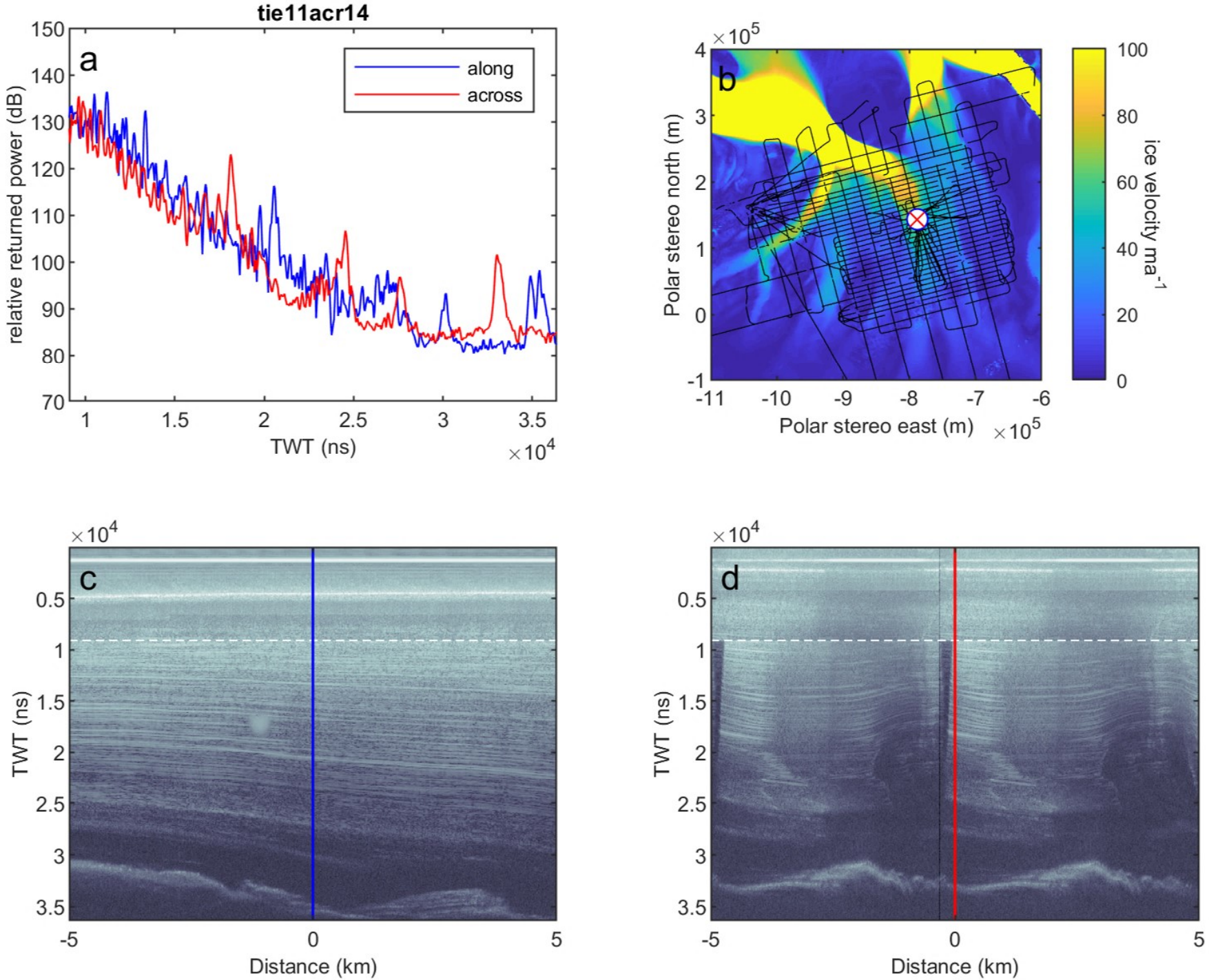

d
×10^4
TWT (ns)
Distance (km)

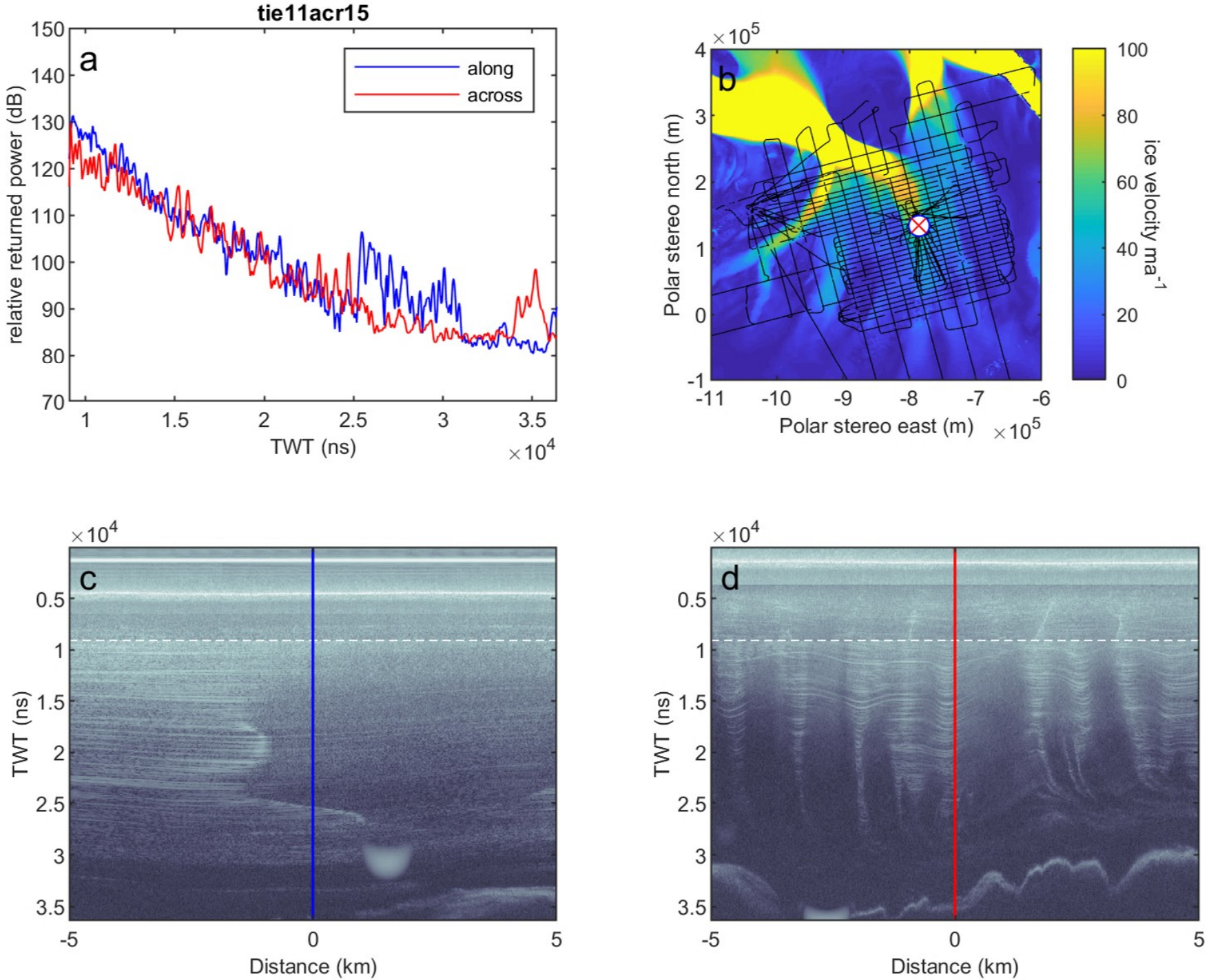

tie11acr10
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

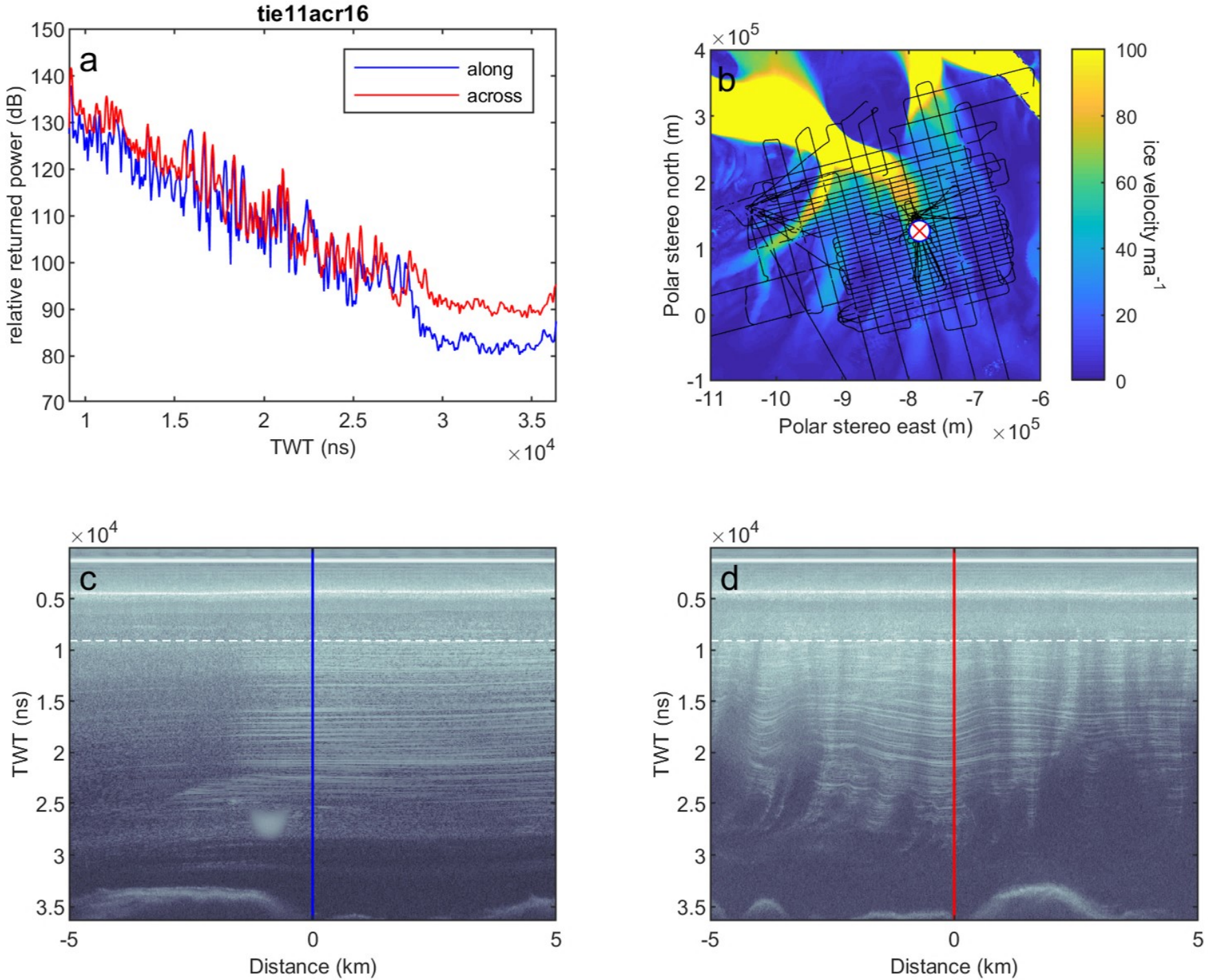

tie11acr11
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

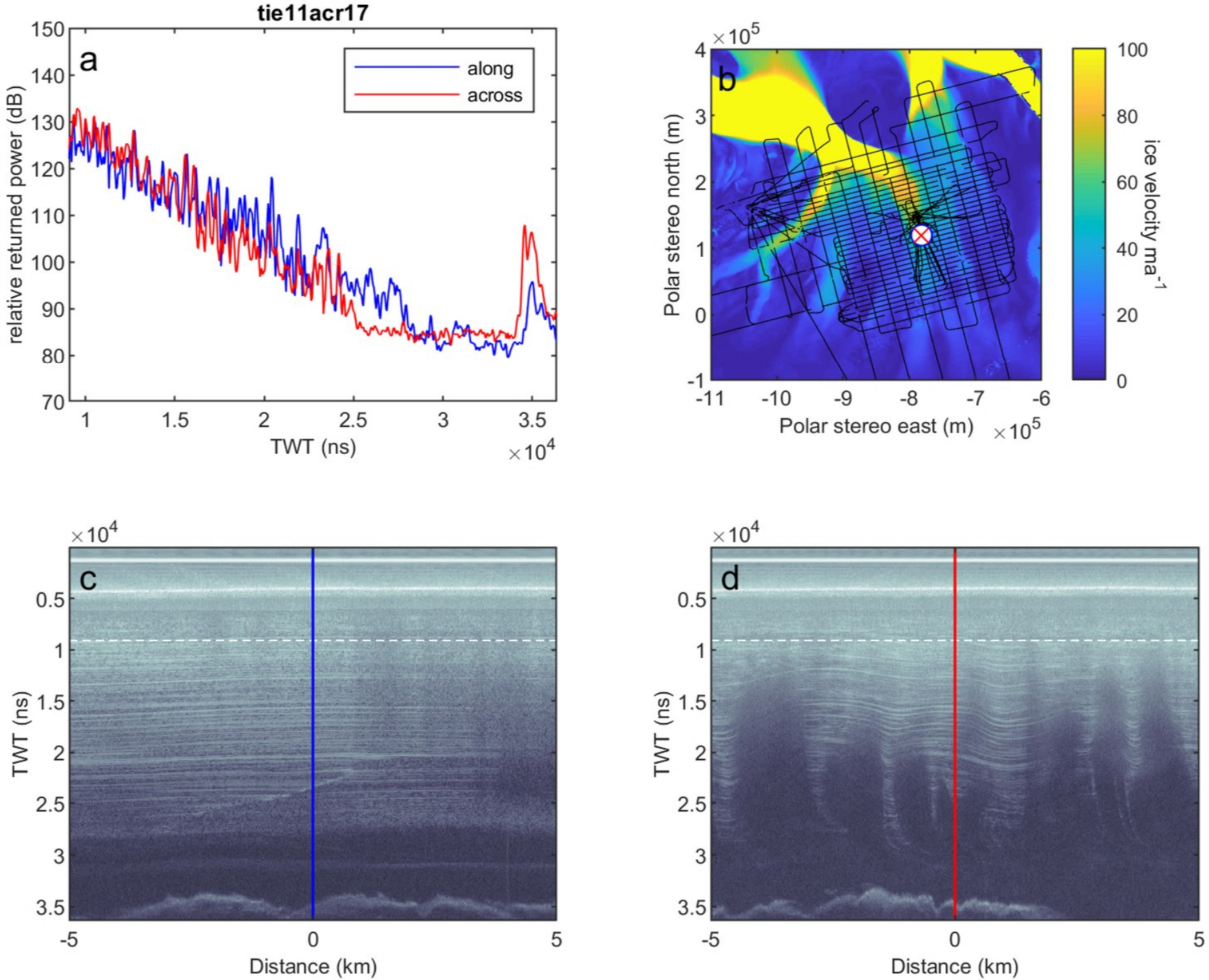

tie11acr12
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

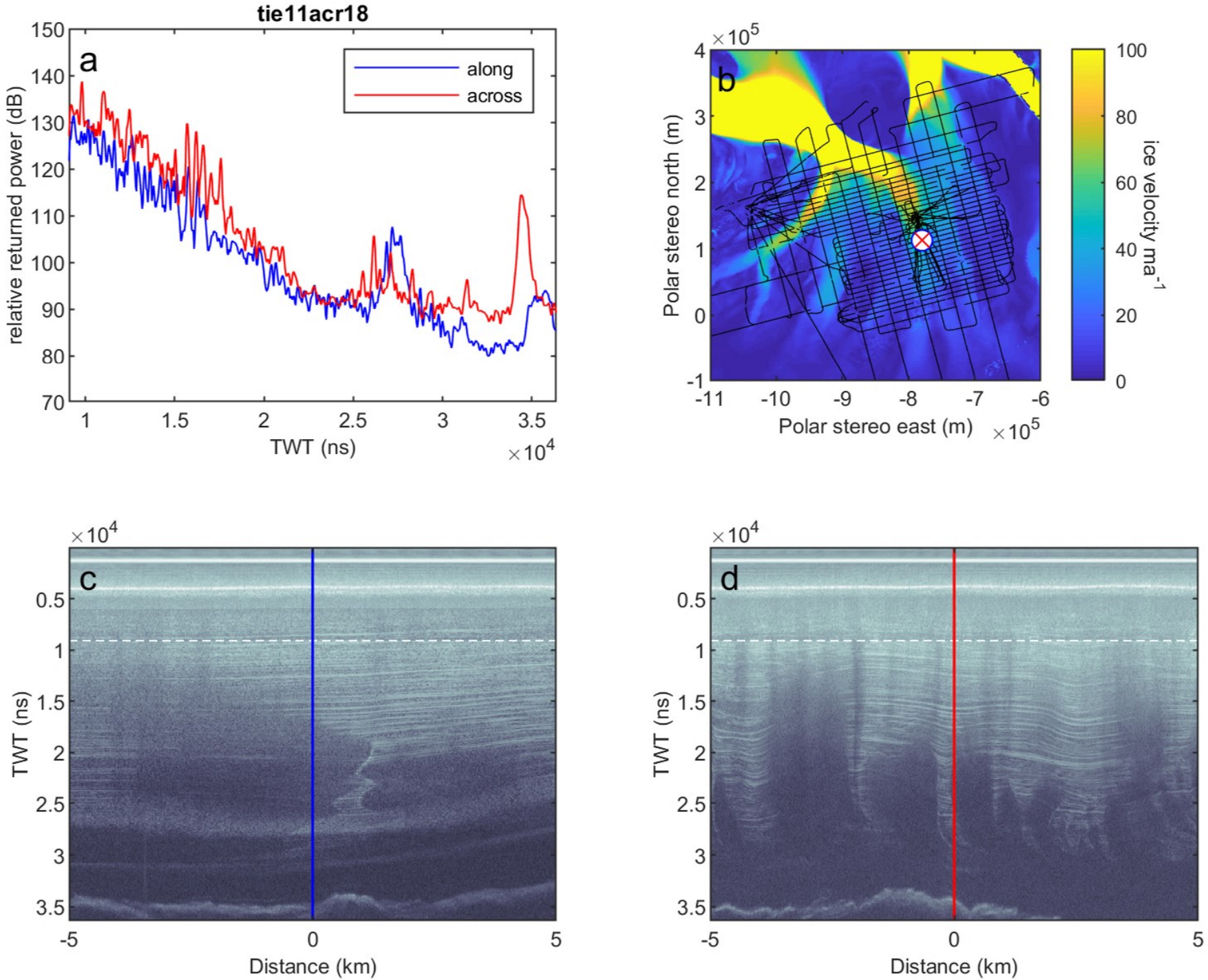

tie11acr13
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

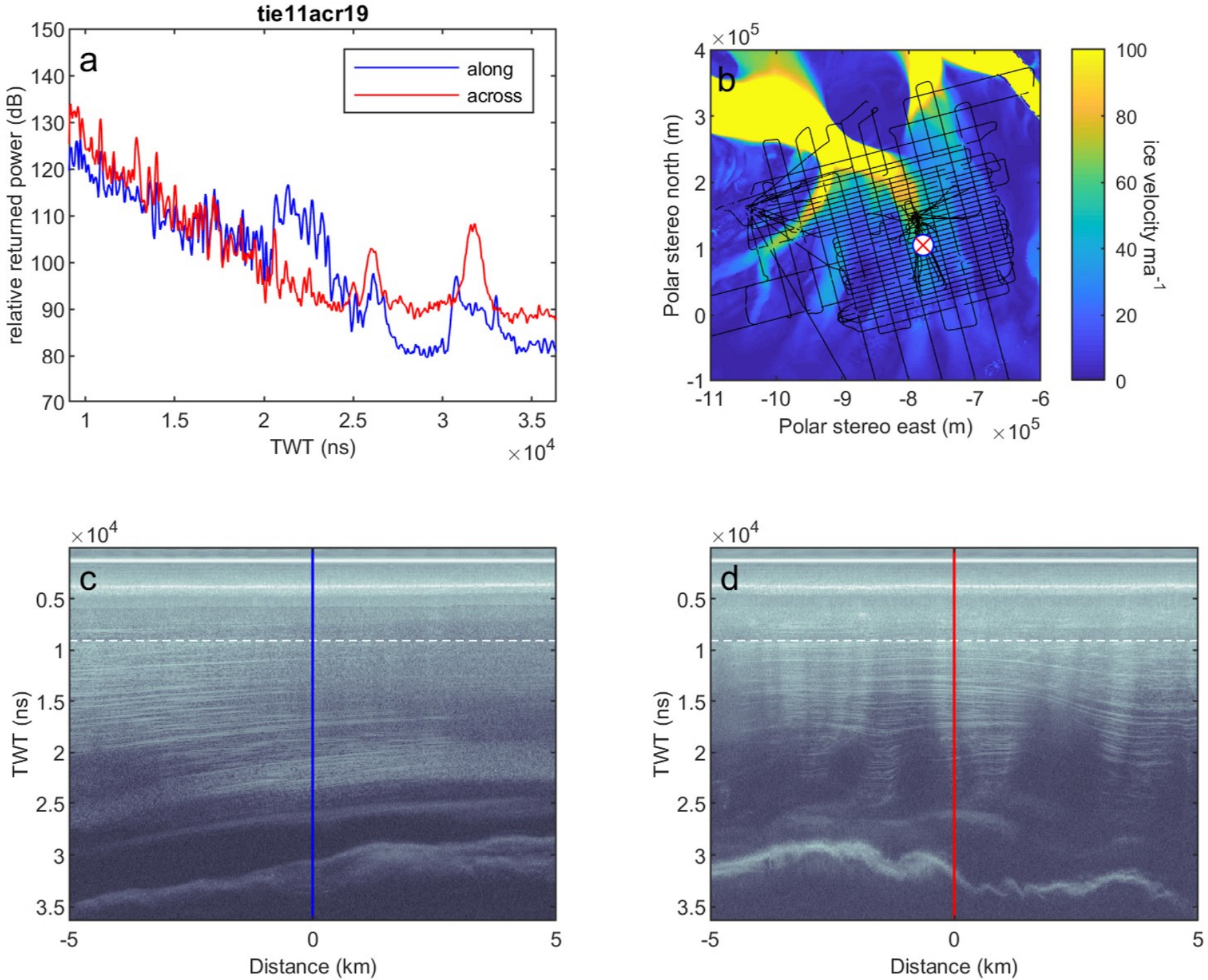

tie11acr14
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

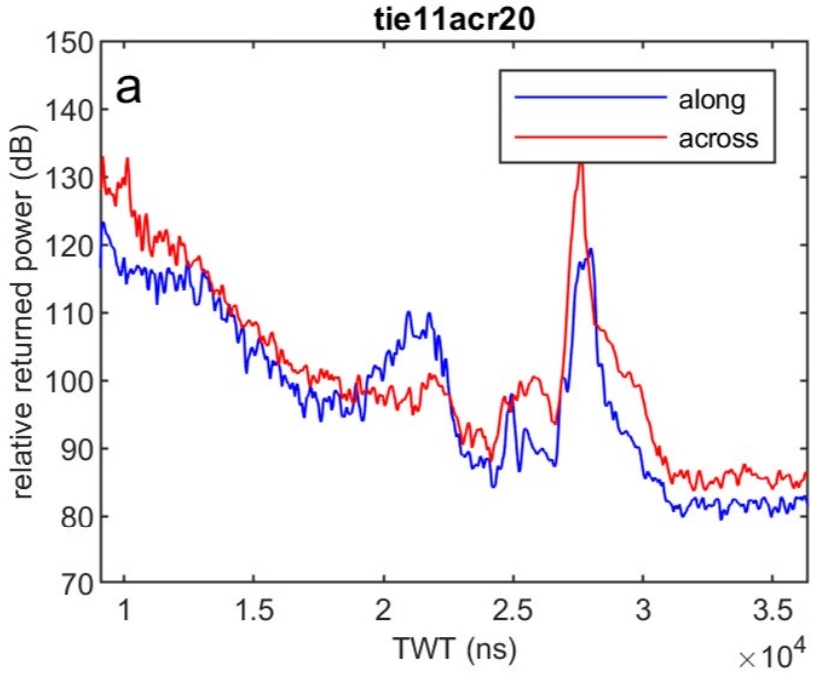

tie11acr15
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

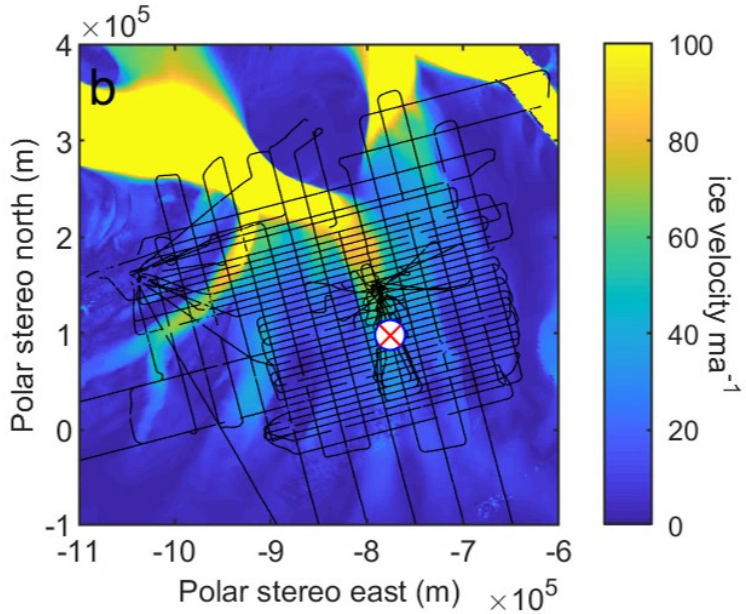

tie11acr16
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

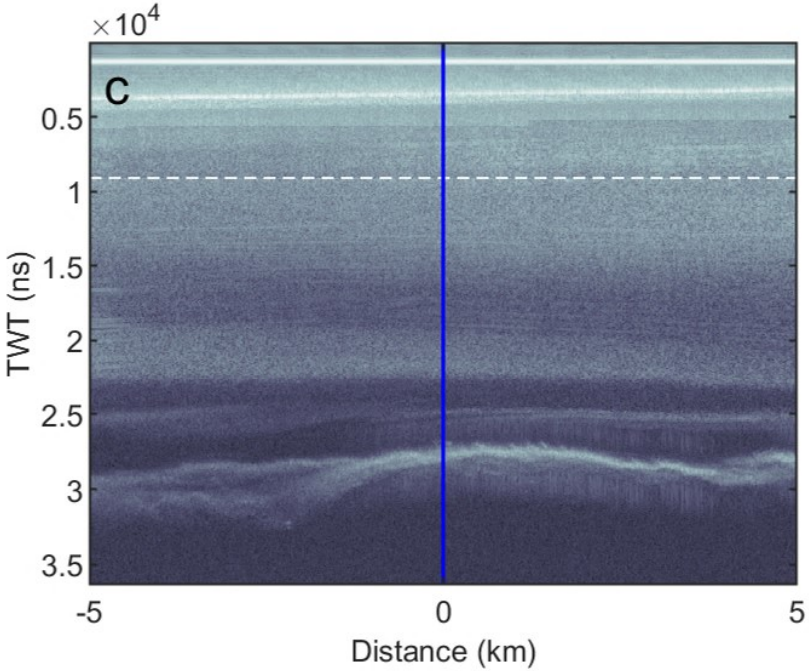

tie11acr17
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

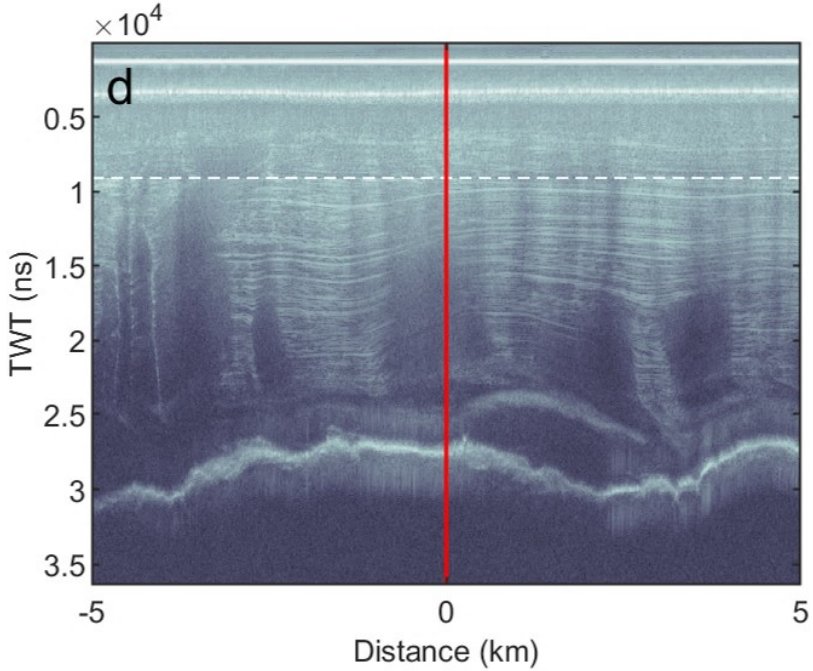

tie11acr18
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

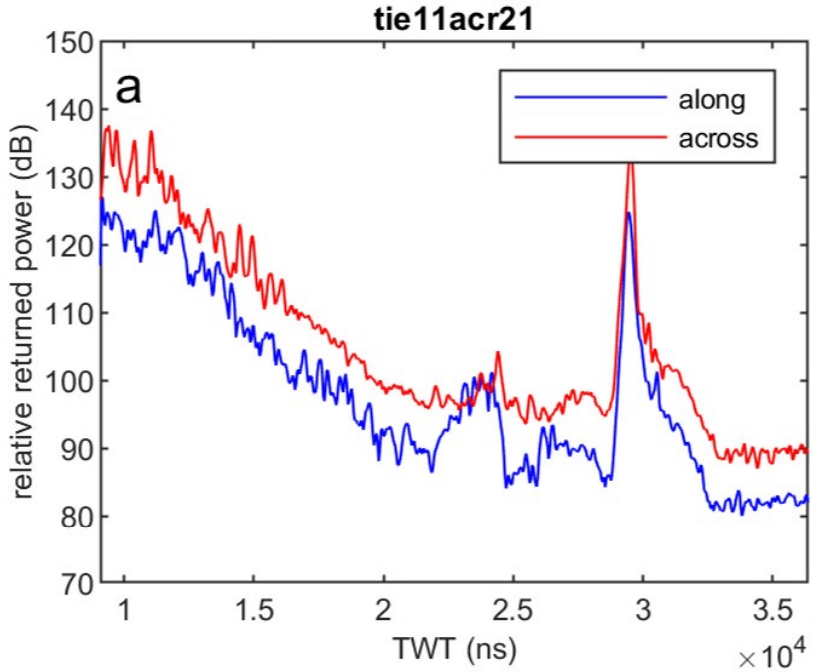

tie11acr19
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

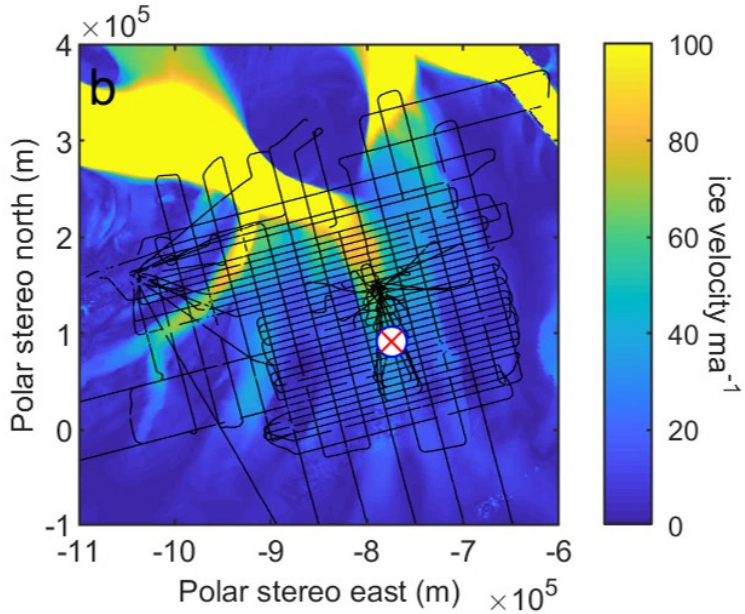

tie11acr20
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

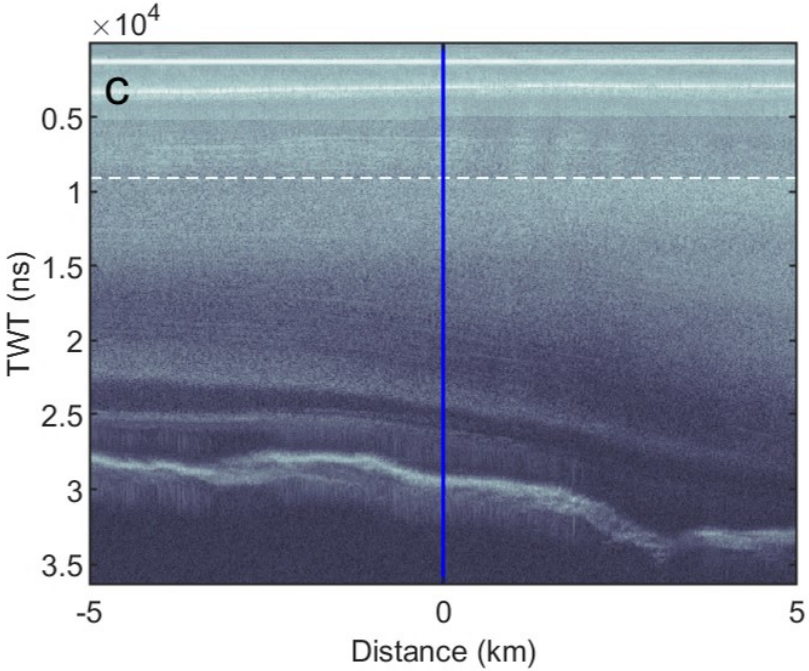

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

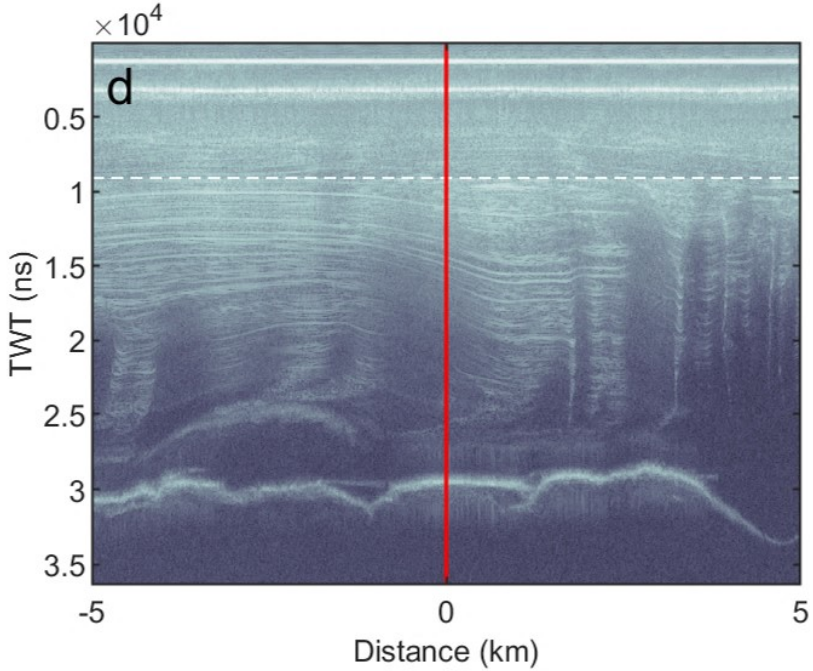

c
×10^4
TWT (ns)
Distance (km)

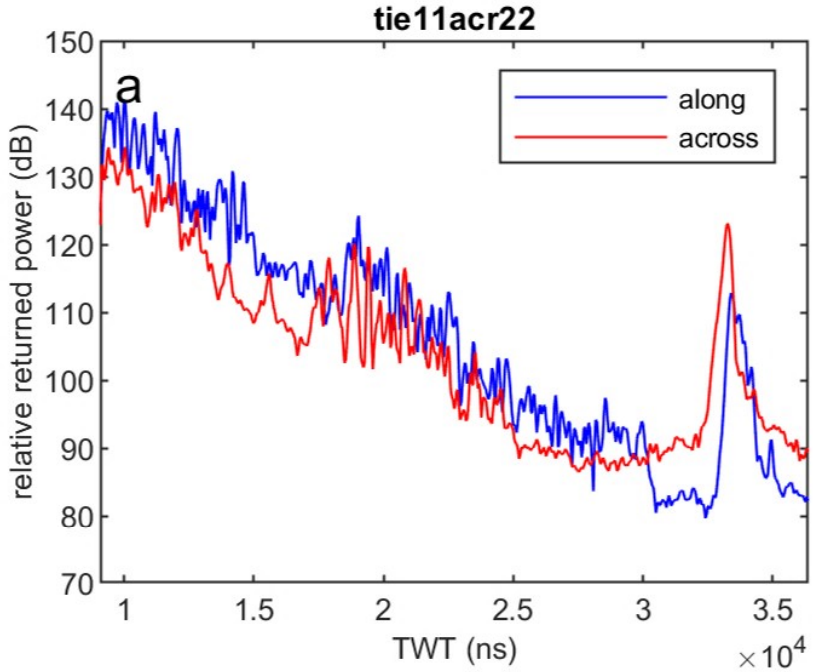

d
×10^4
TWT (ns)
Distance (km)

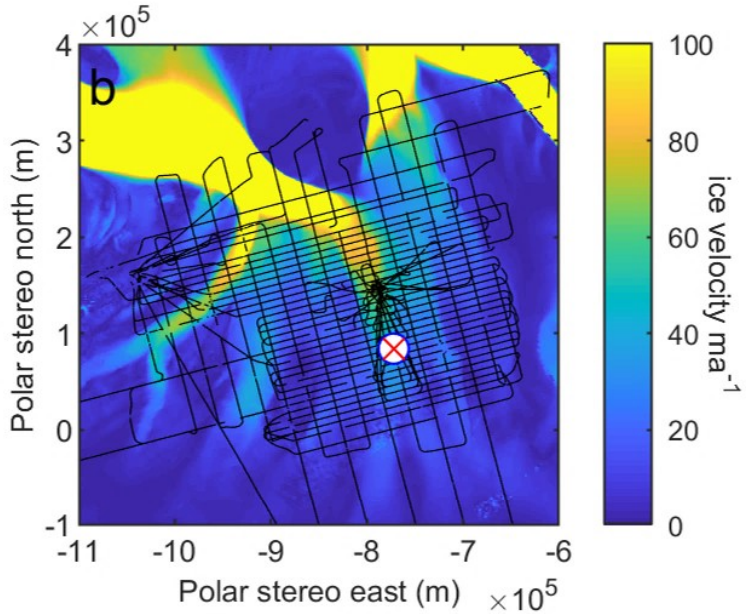

tie11acr21
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

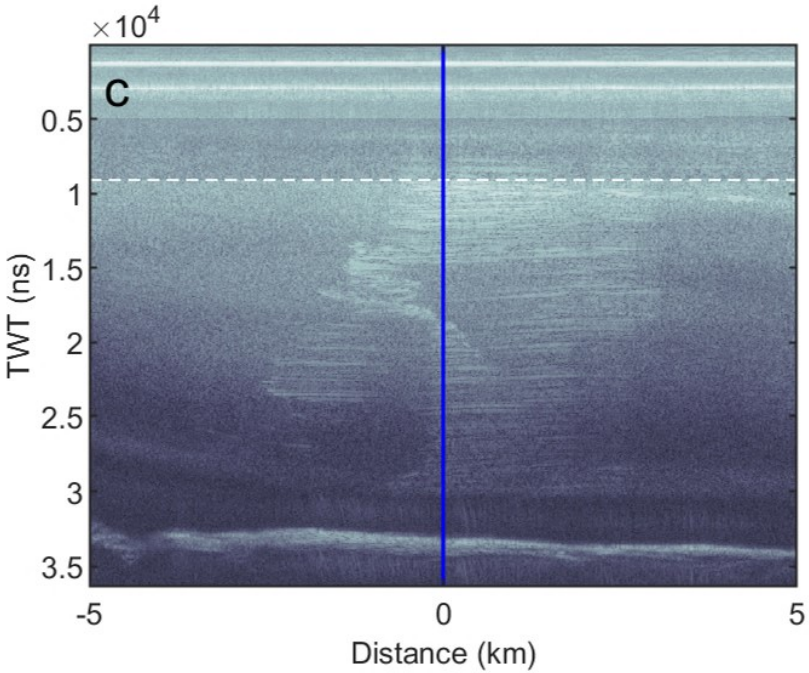

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

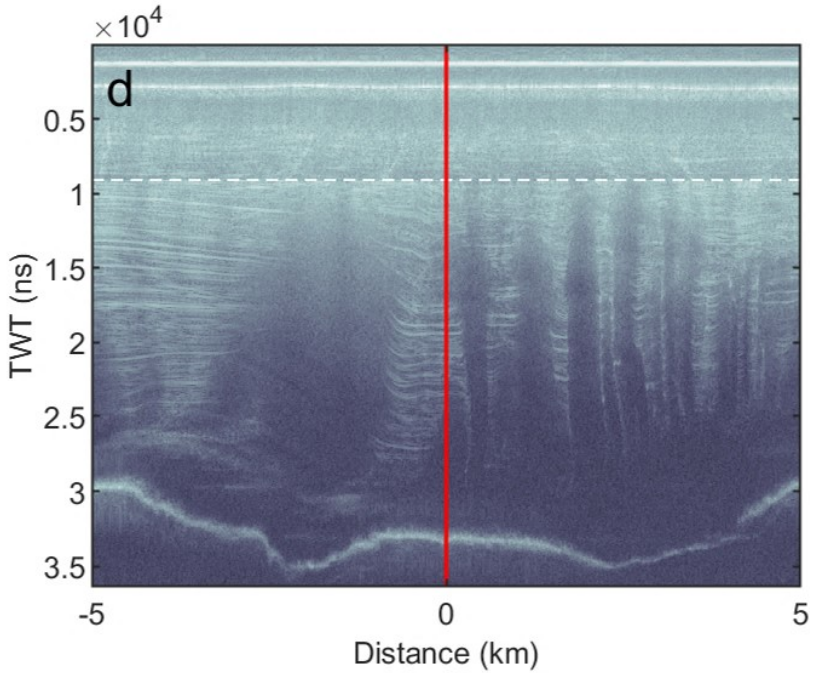

c
×10^4
TWT (ns)
Distance (km)

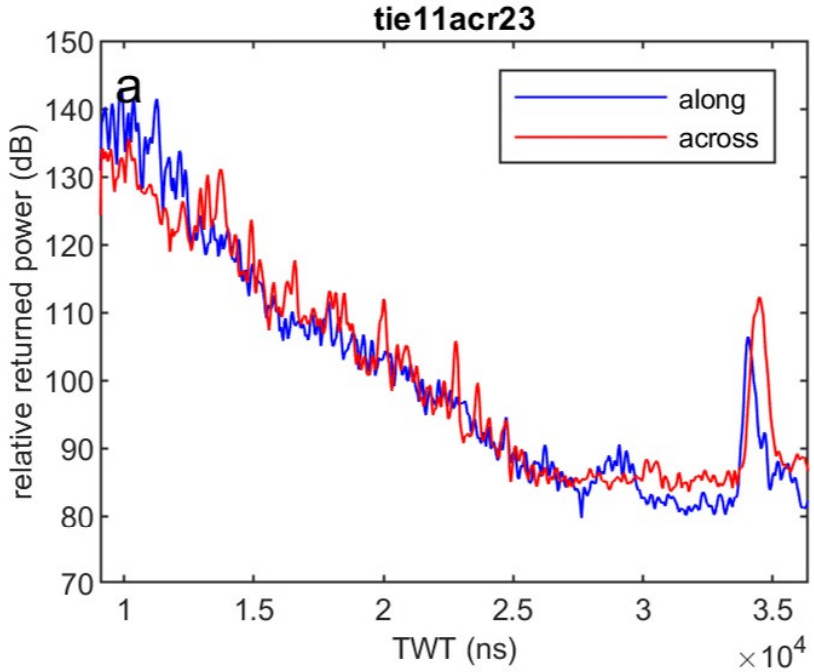

d
×10^4
TWT (ns)
Distance (km)

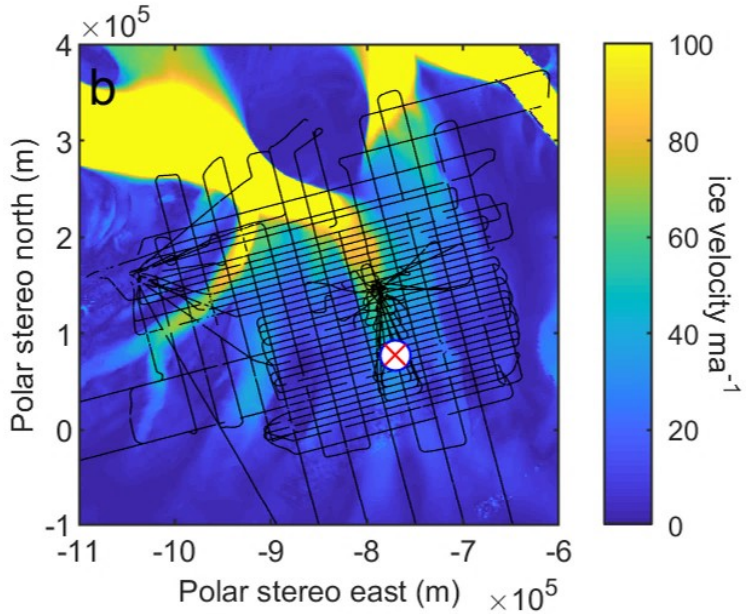

tie11acr22
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

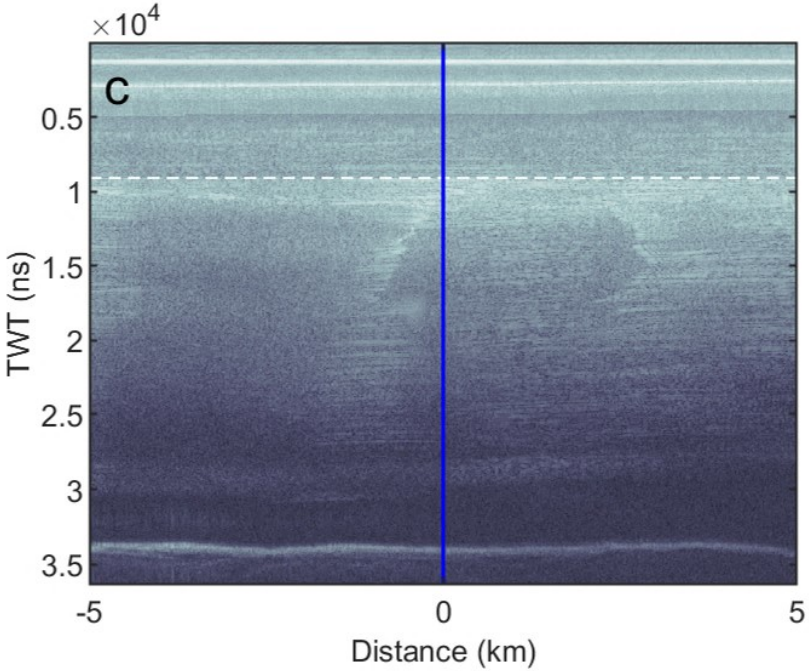

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

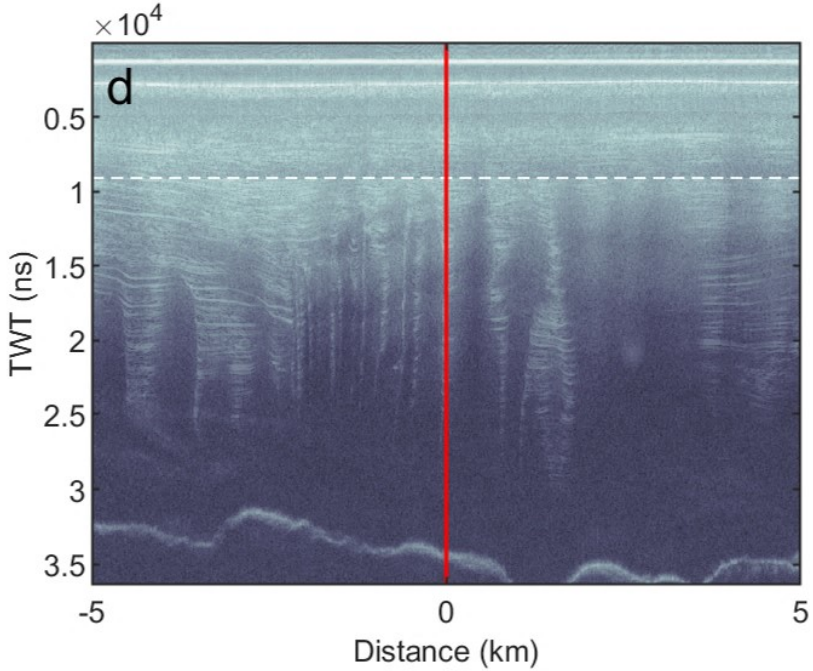

c
×10^4
TWT (ns)
Distance (km)

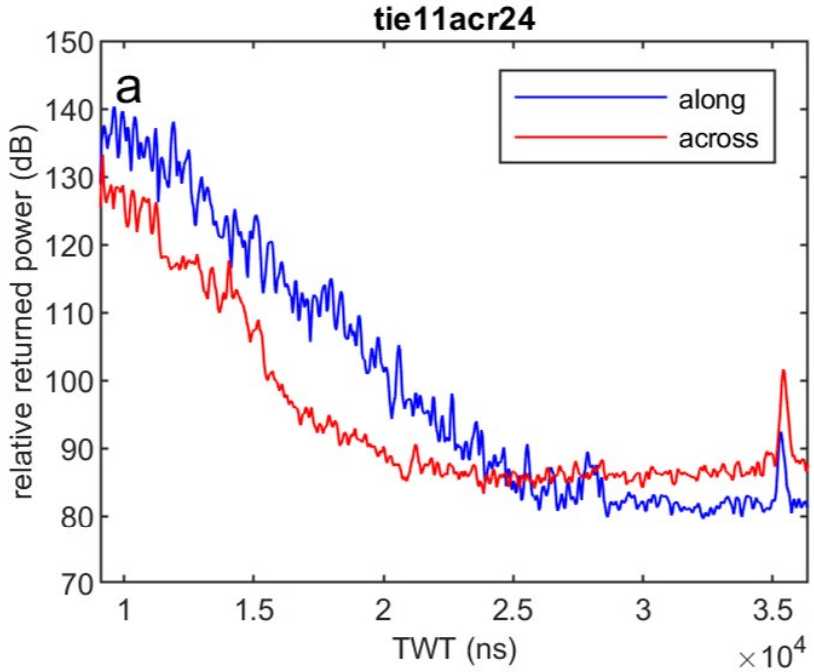

d
×10^4
TWT (ns)
Distance (km)

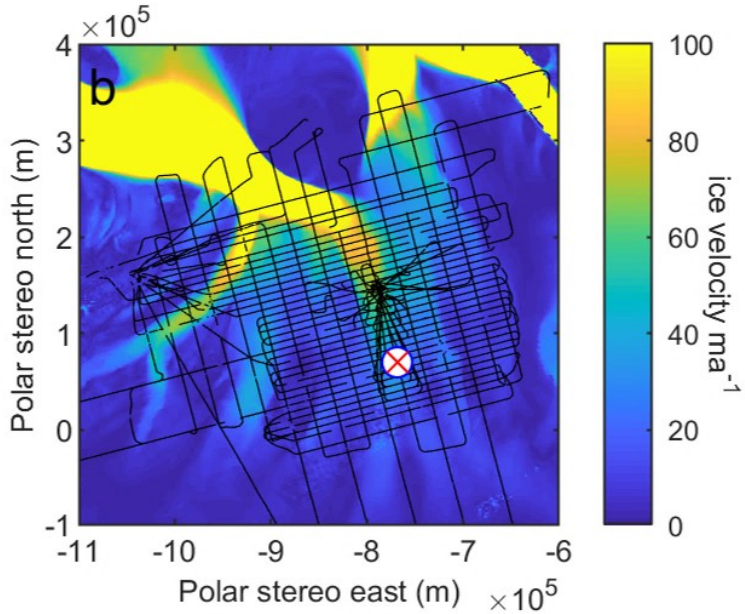

tie11acr23
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

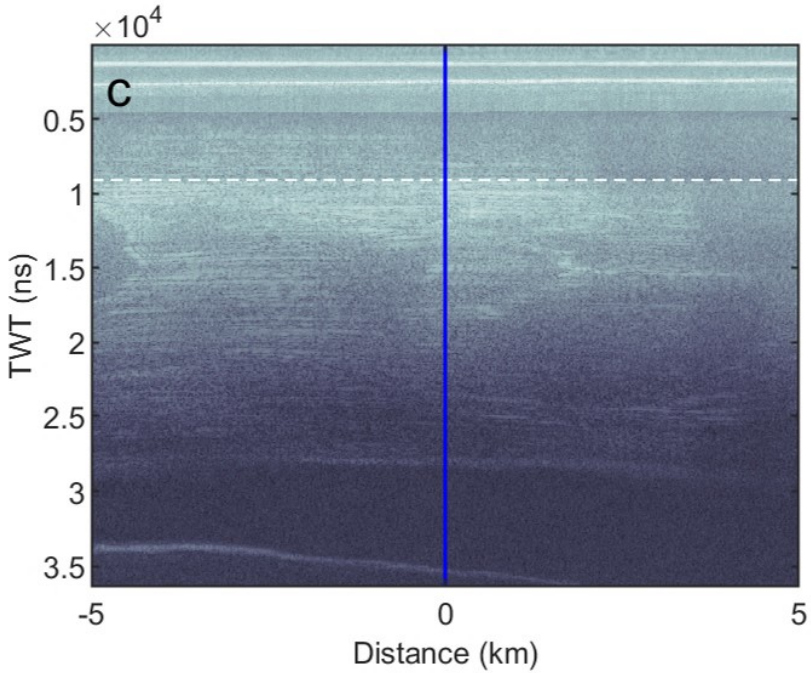

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

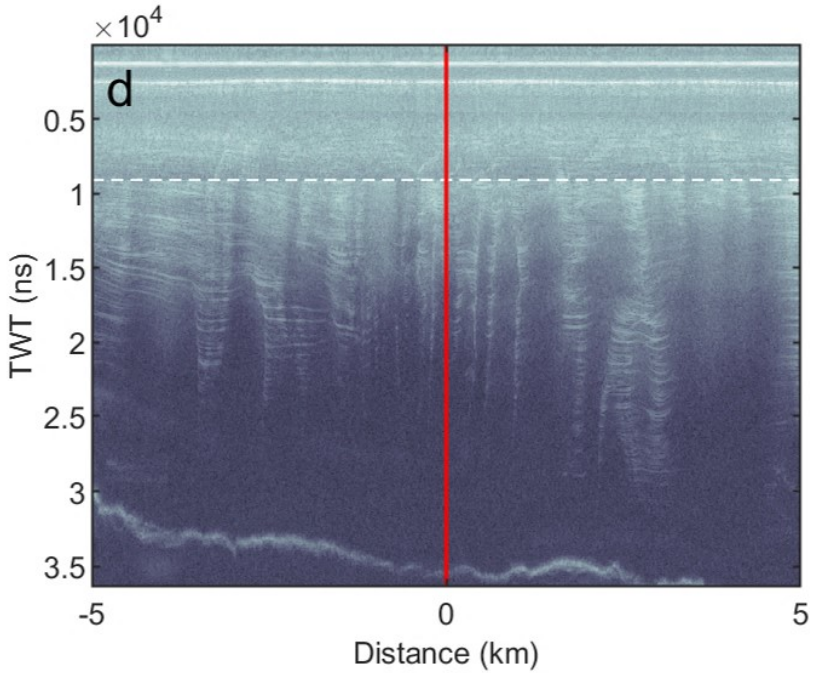

c
×10^4
TWT (ns)
Distance (km)


d
×10^4
TWT (ns)
Distance (km)


tie11acr24
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

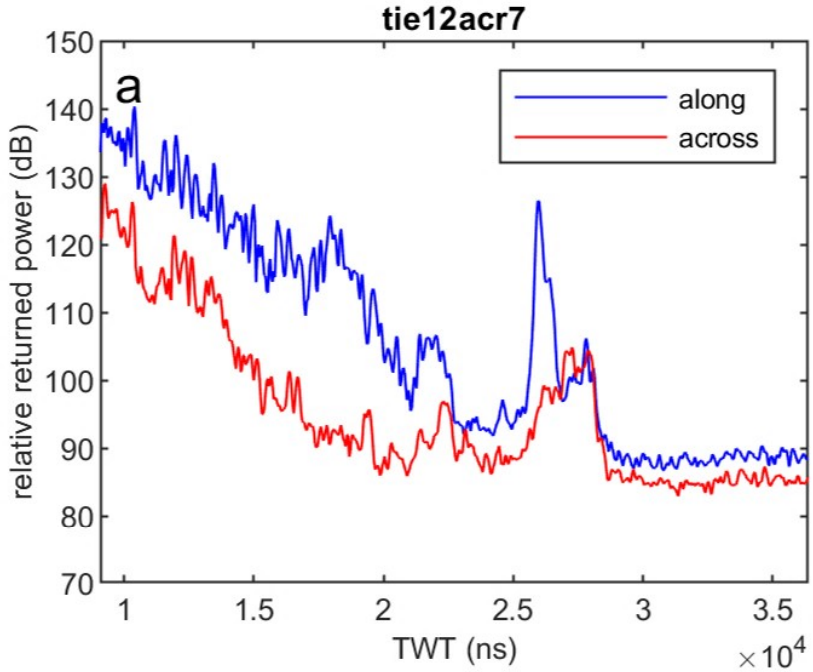

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

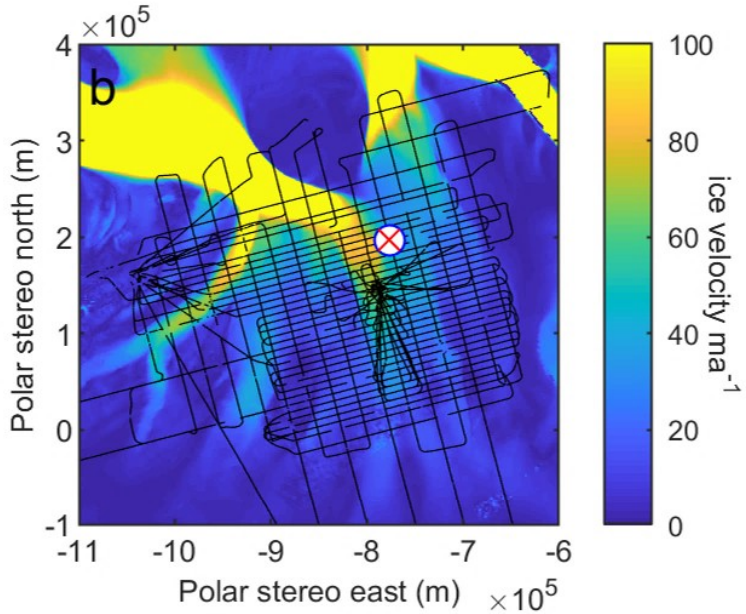

c
×10^4
TWT (ns)
Distance (km)

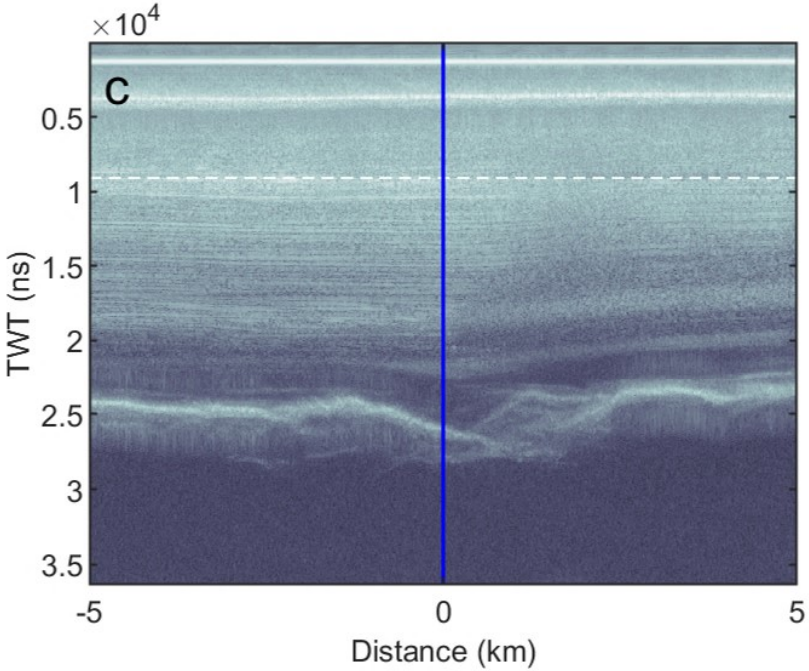

d
×10^4
TWT (ns)
Distance (km)

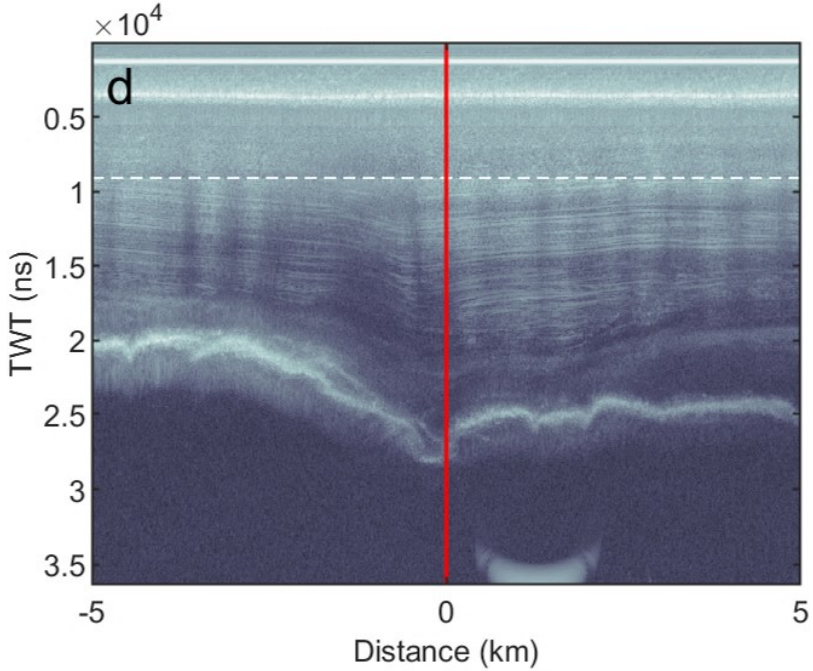
Supplementary Figure 4

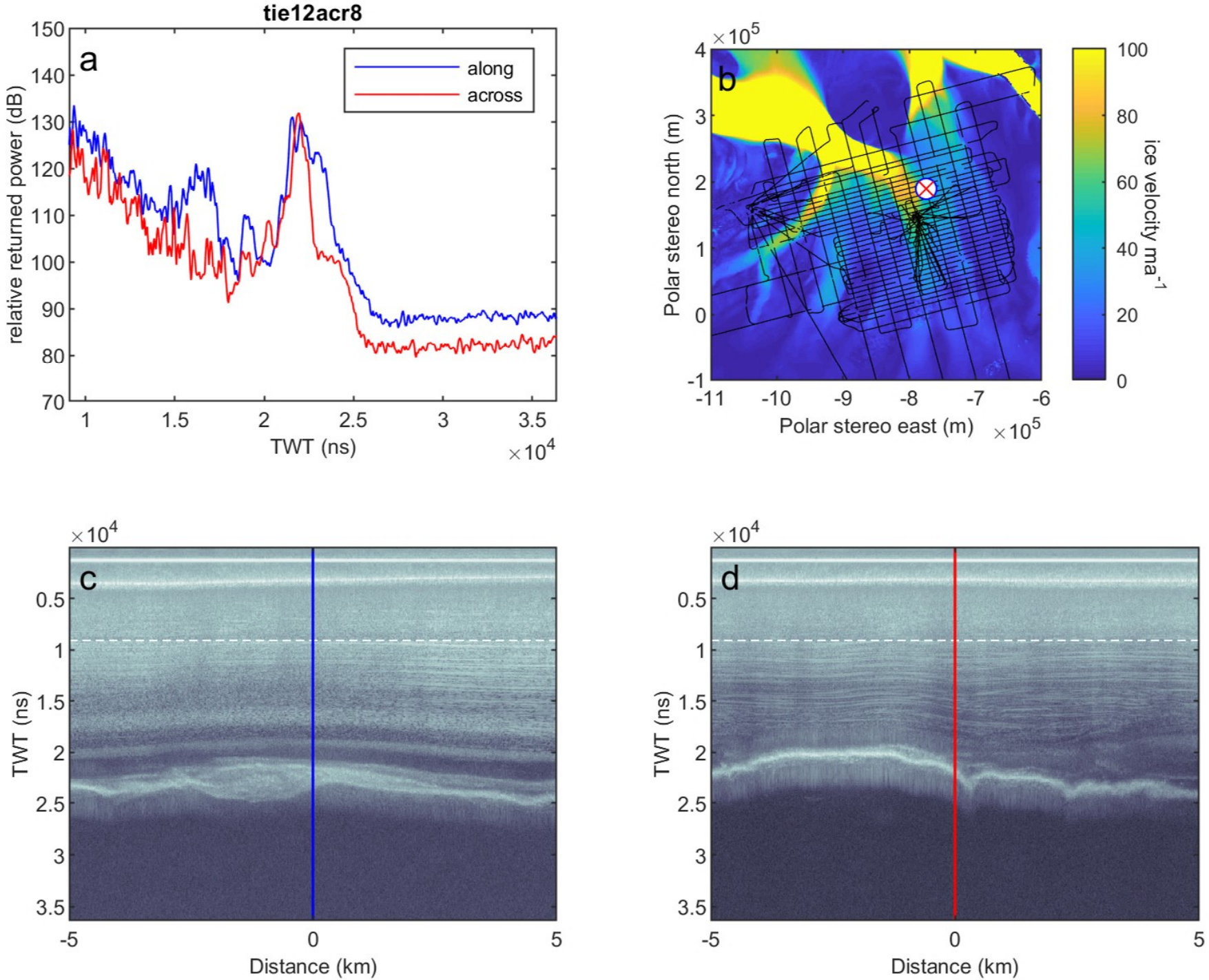
PDF files of crossovers within a subset of the IMAFI survey grid (tie line 12, across lines 7-24), over the area of the IIS characterized by the large-scale englacial folding: (a) relative returned power (dB) for eleven stacked 2D SAR processed traces (~100 m of radar data) along (blue) and across (red) ice flow; (b) location of radar data crossover (red cross with white filled circle), underlain by radar survey grid (thin black lines) and ice velocity (Mouginot et al., 2019), with colour scale saturated at 100 ma^{-1}. (c) radar data along ice flow. Cross-over with across ice flow radar data (see 'd') shown with blue vertical line. Blue profile in 'a' is the returned power of the crossover trace stacked with 5 traces either side; (d) radar data across ice flow. Cross-over with along ice flow radar data 'c' shown with red vertical line. Red profile in 'a' is the returned power of the crossover trace stacked with 5 traces either side. It is important to note that in these examples, unlike the one given in Figure 6, not all the along and across flow radar data were acquired at the crossover location with the same aircraft altitude, and therefore the same range to ice surface. At the crossovers where the aircraft range does differ (i.e. tie12acr13-15 – where the ice surface and bed reflections are clearly offset to each other), care should be taken comparing the along and across flow data, as the geometry and anisotropy of the ice could be responsible for the pronounced anisotropy of the deep ice unit reflectivity. We include all data for completeness however. White dashed lines in 'c' and 'd' define the boundary (200th vertical sample) between radar data SAR-processed (below line) and radar data not SAR-processed (above line). Information on SAR processing is available in Jeofry et al., (2018a).

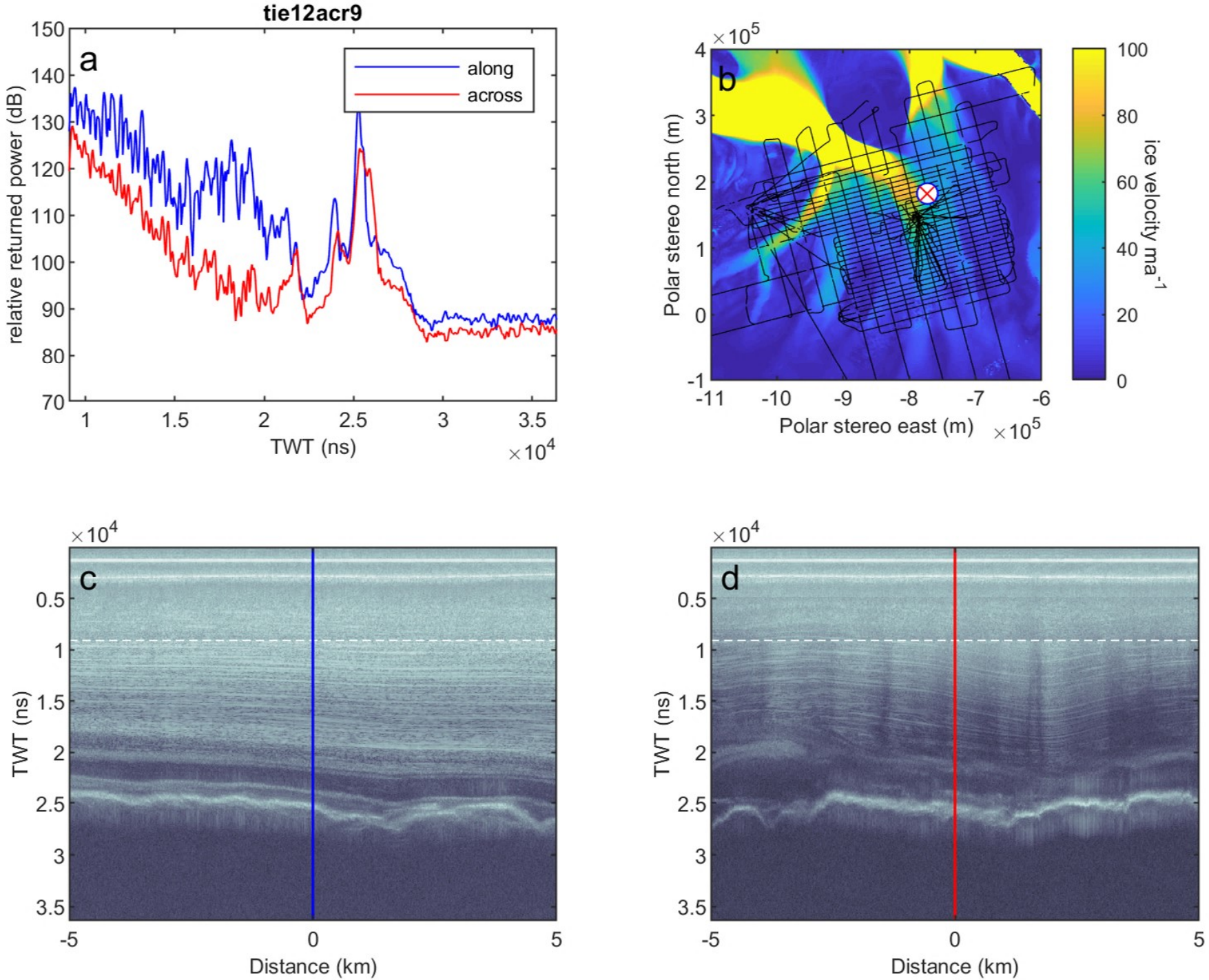

tie12acr7
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

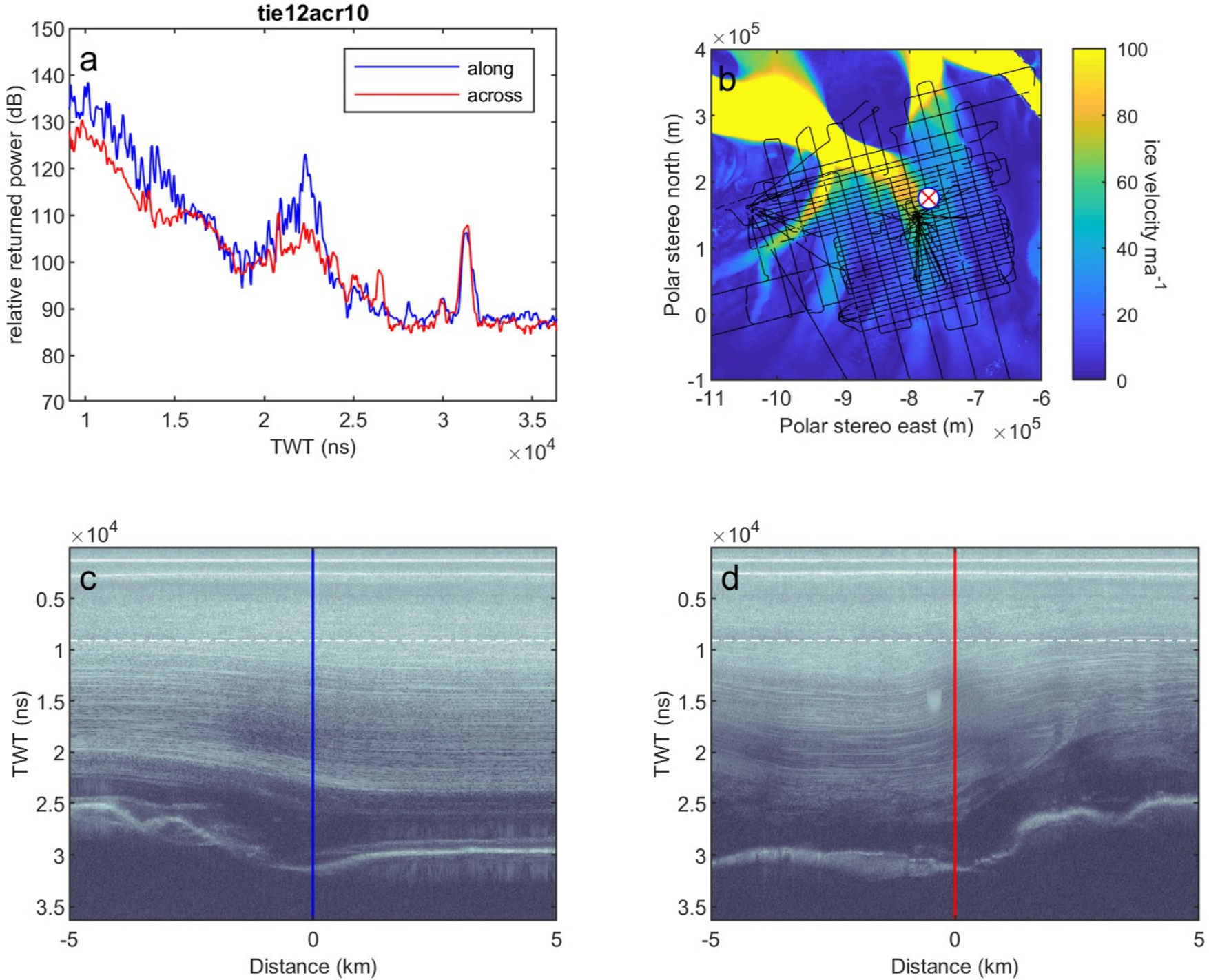

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

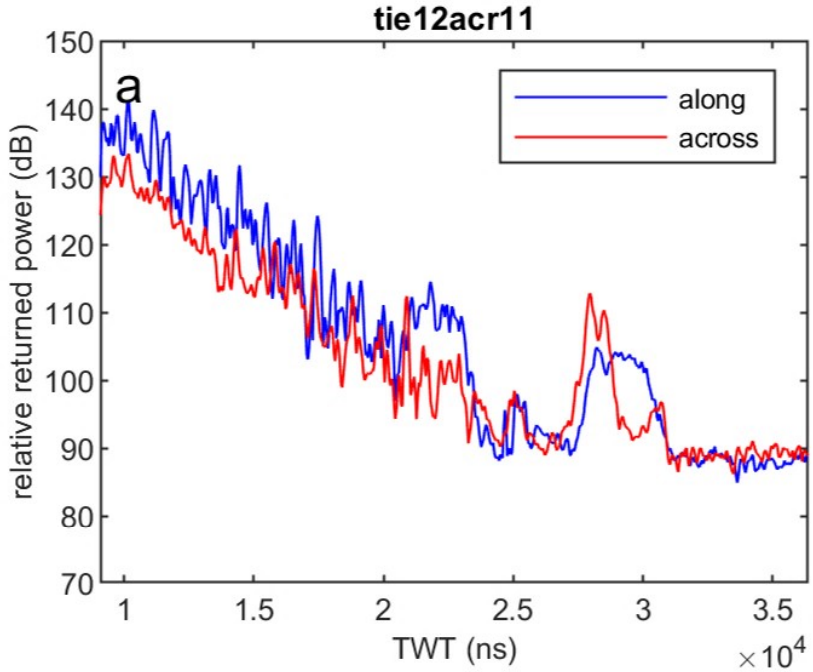

c
×10^4
TWT (ns)
Distance (km)

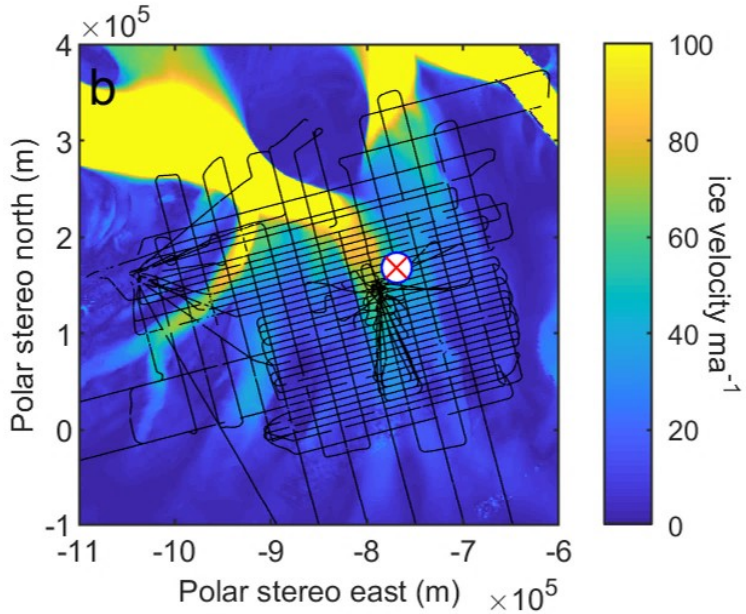

d
×10^4
TWT (ns)
Distance (km)

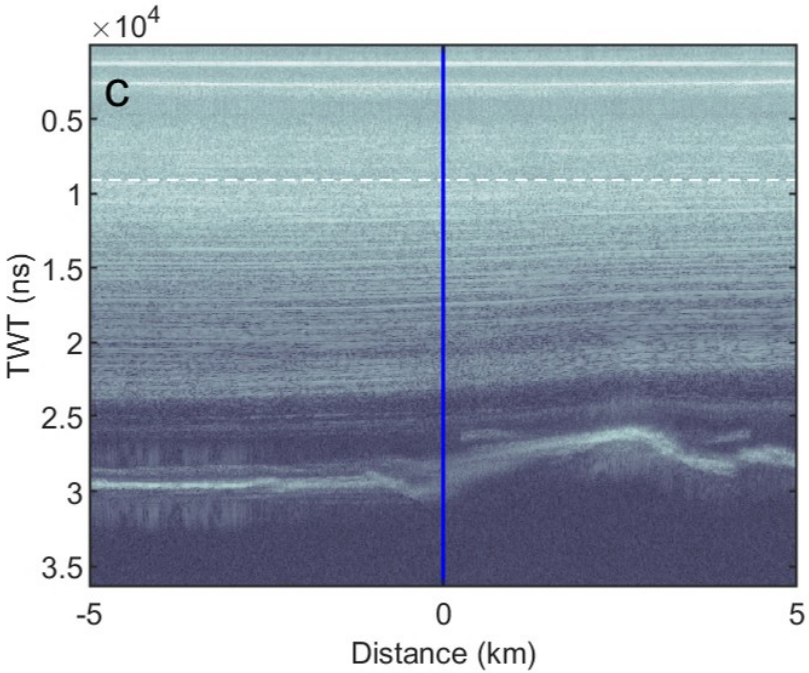

tie12acr8
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

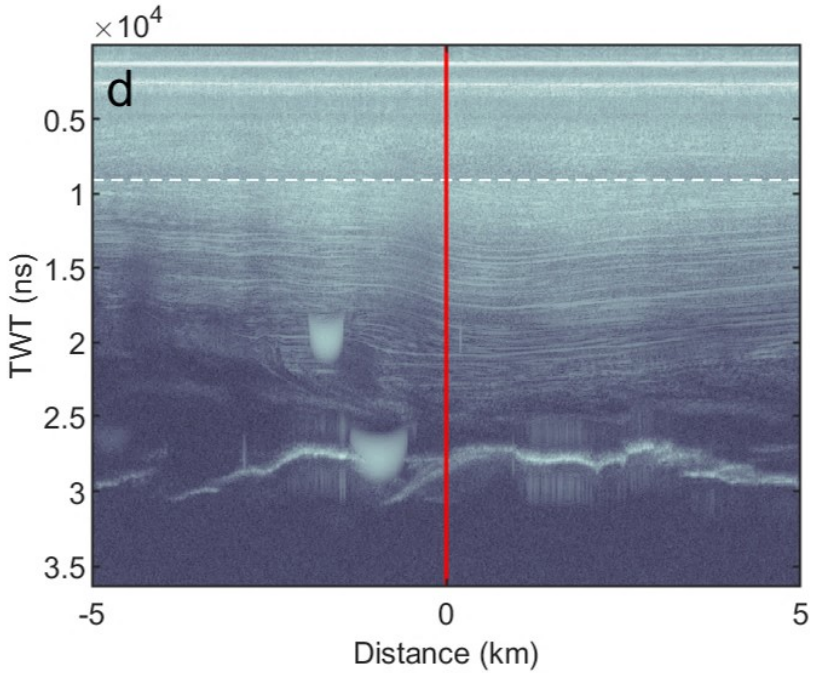

tie12acr9
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

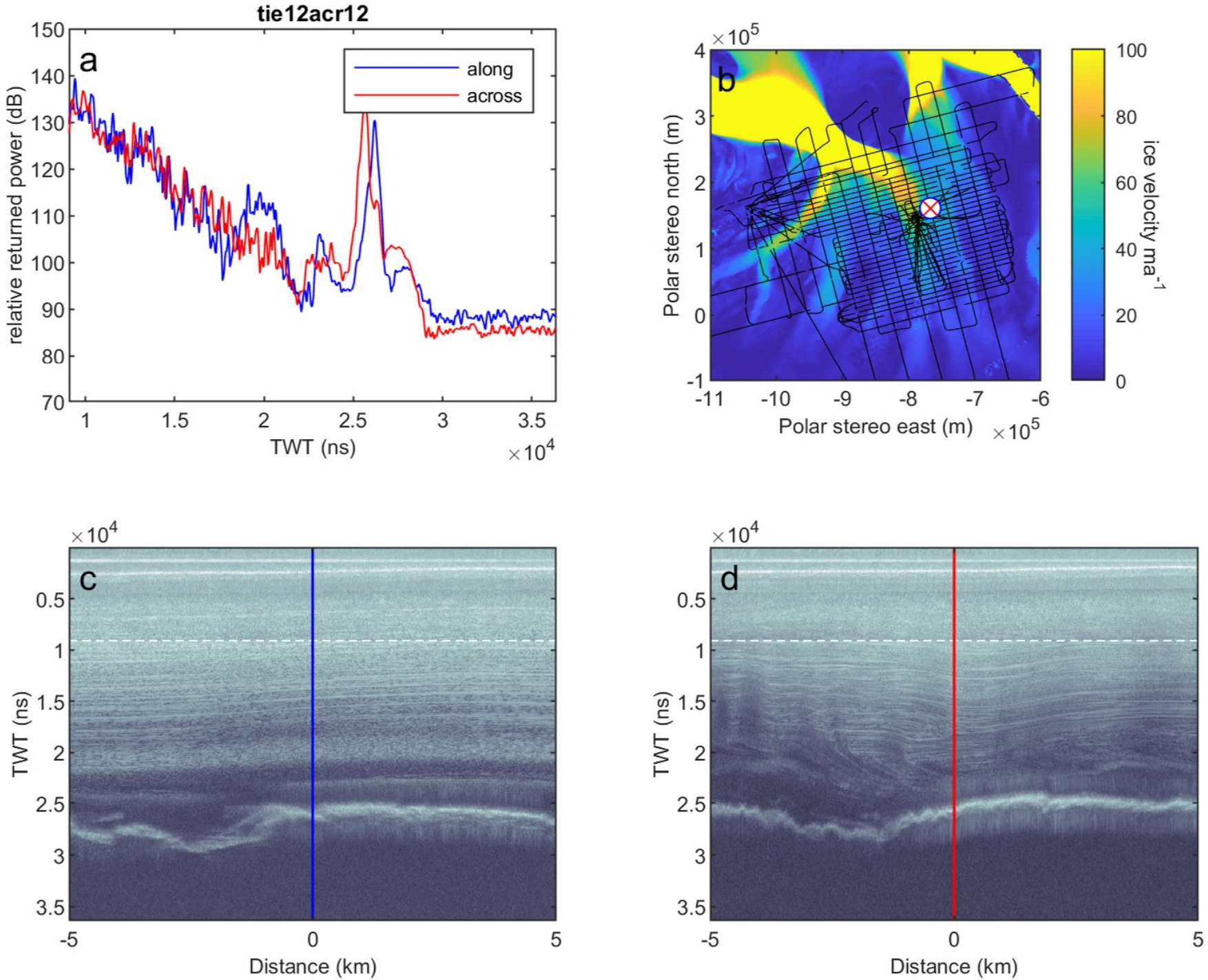

tie12acr10
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

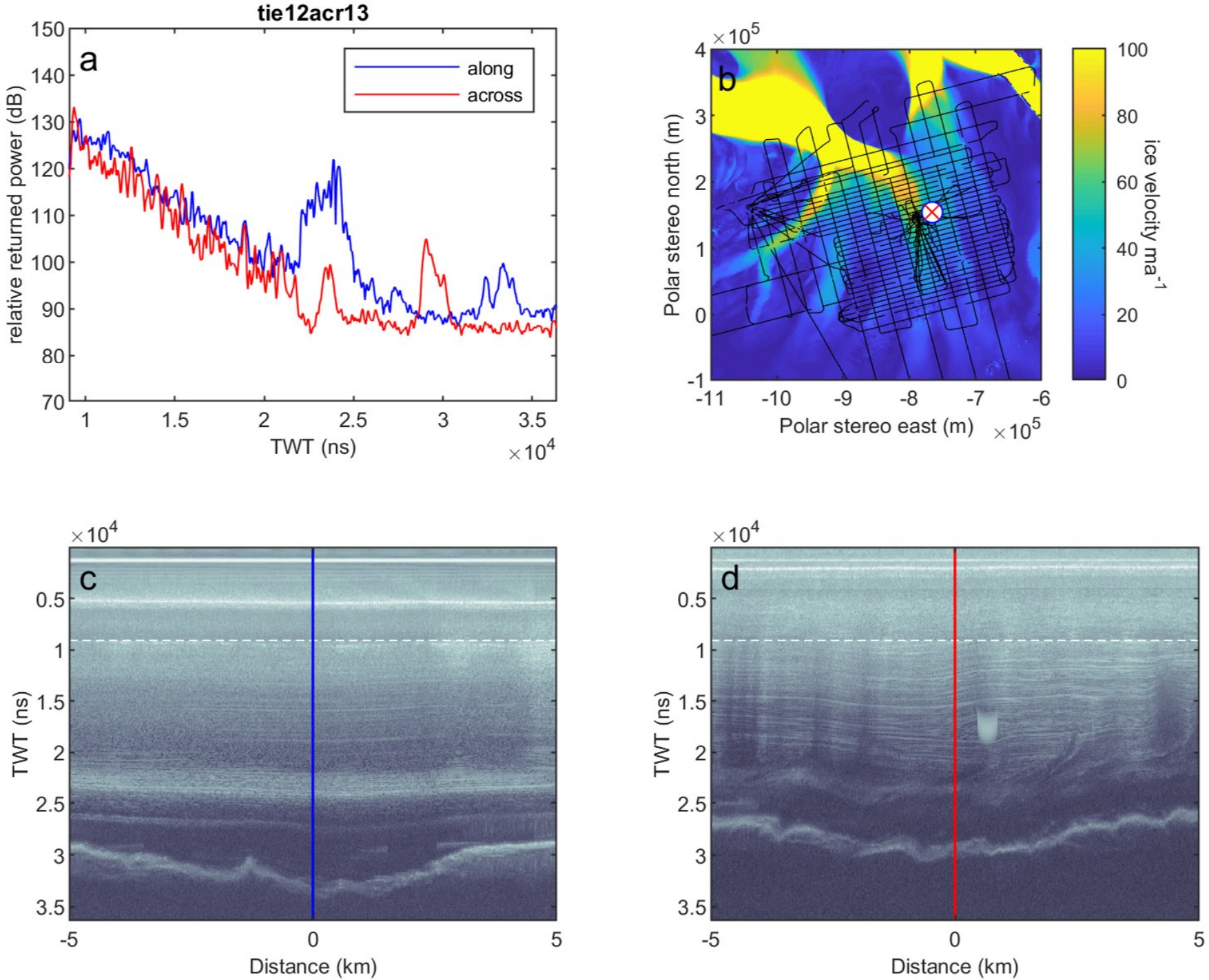

tie12acr11
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

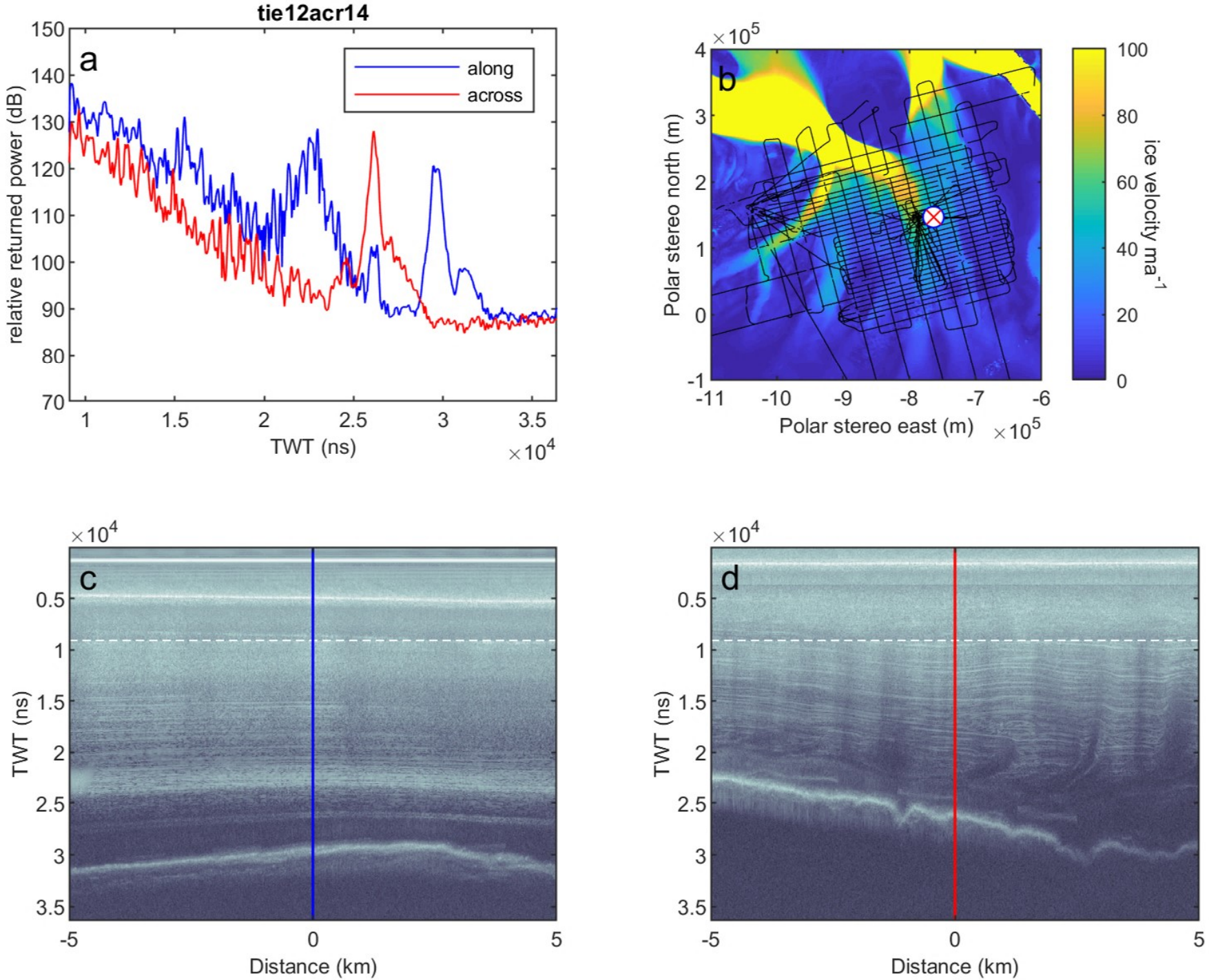

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

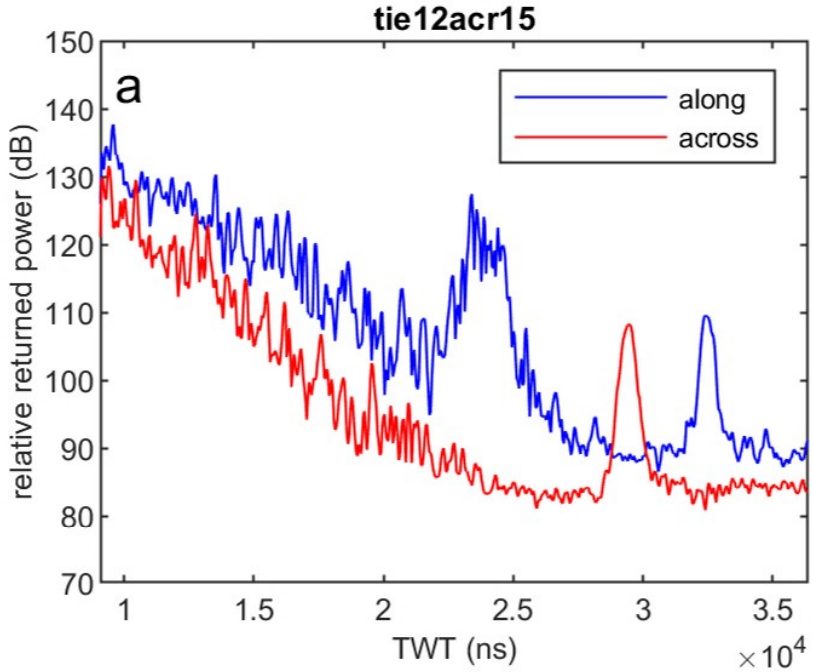

c
×10^4
TWT (ns)
Distance (km)

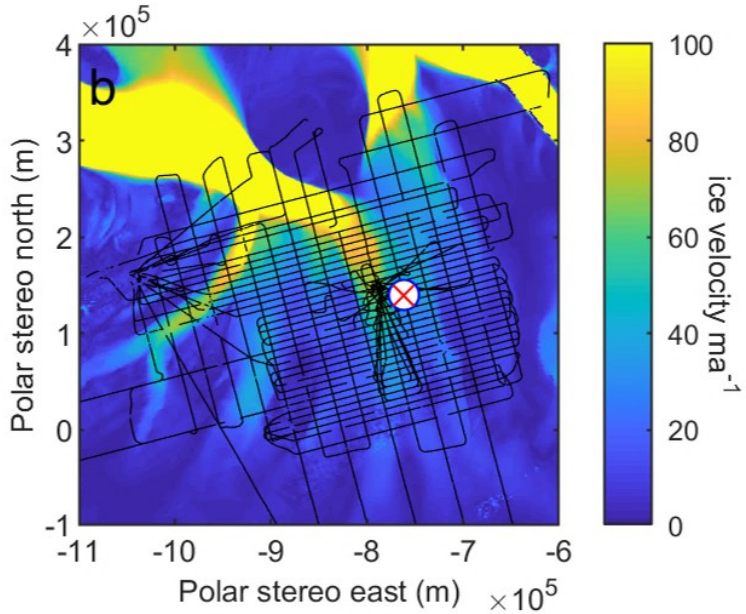

d
×10^4
TWT (ns)
Distance (km)

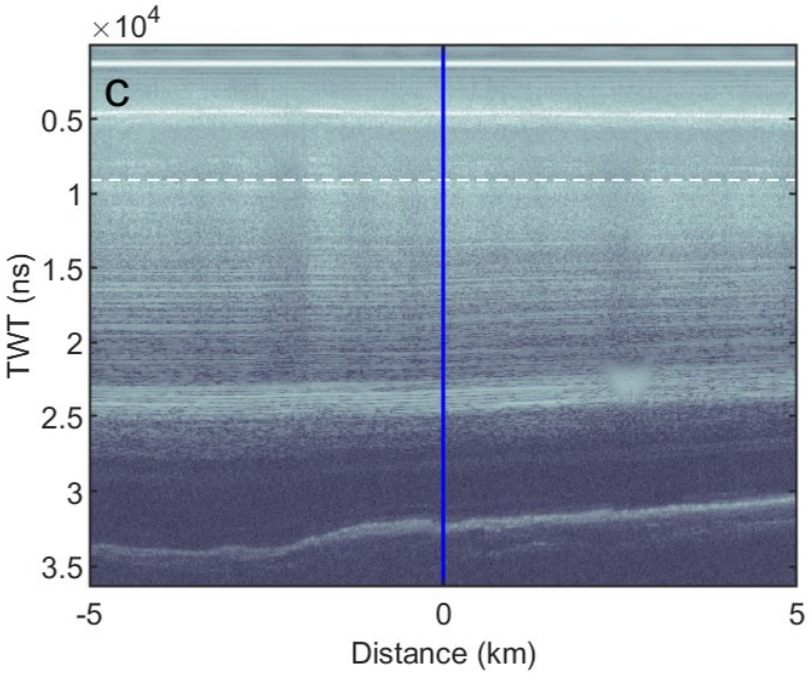

tie12acr12
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

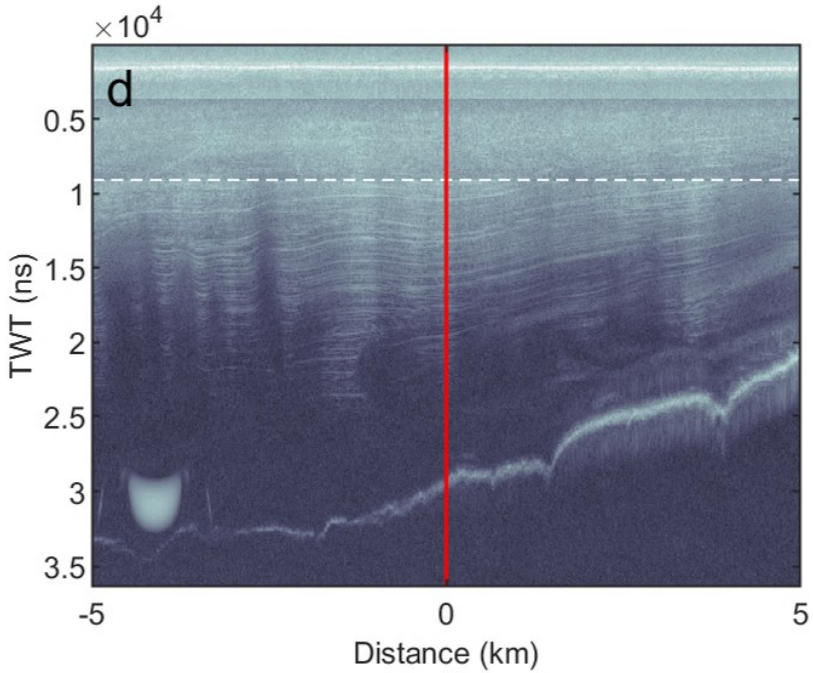

tie12acr13
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

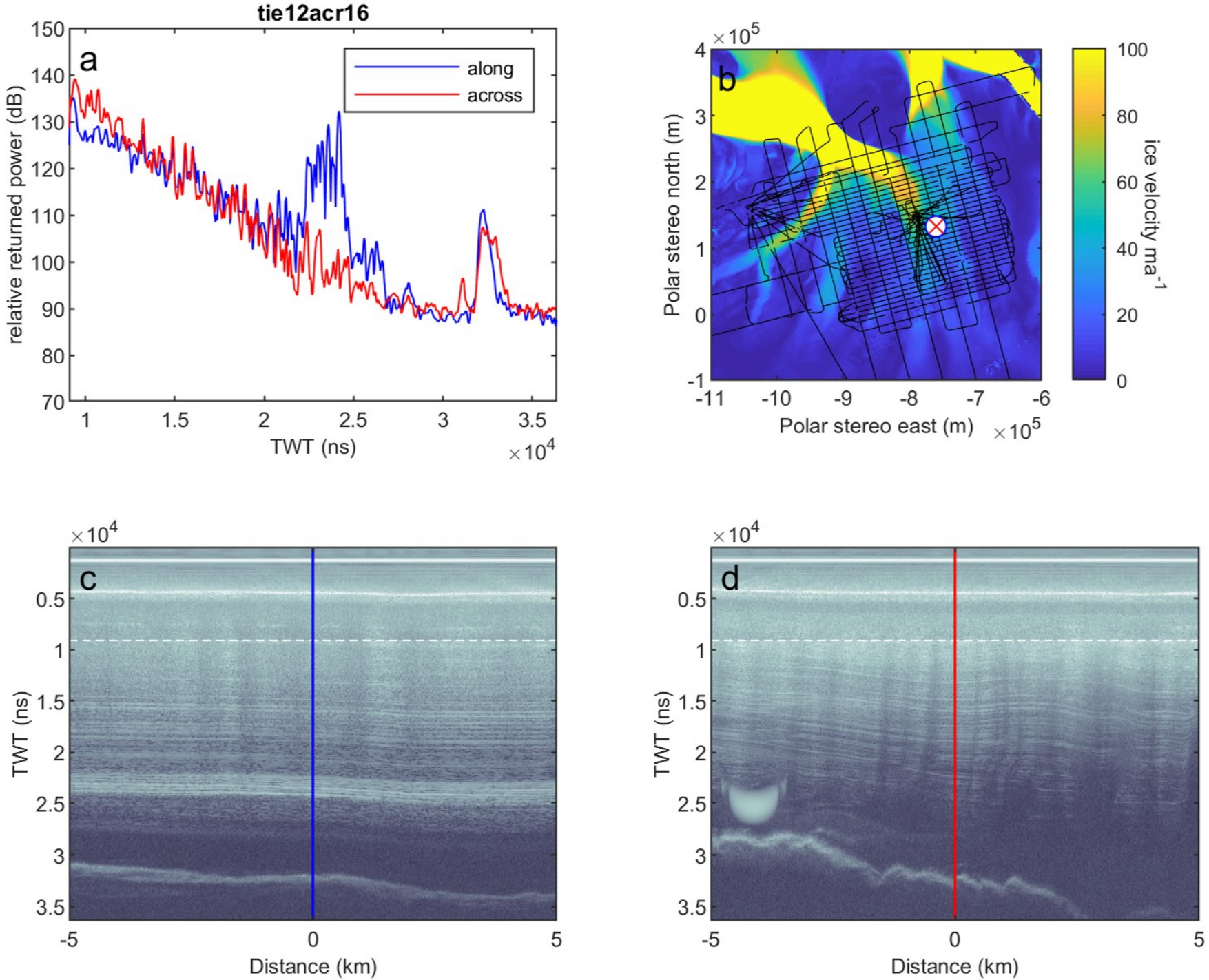

tie12acr14
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)

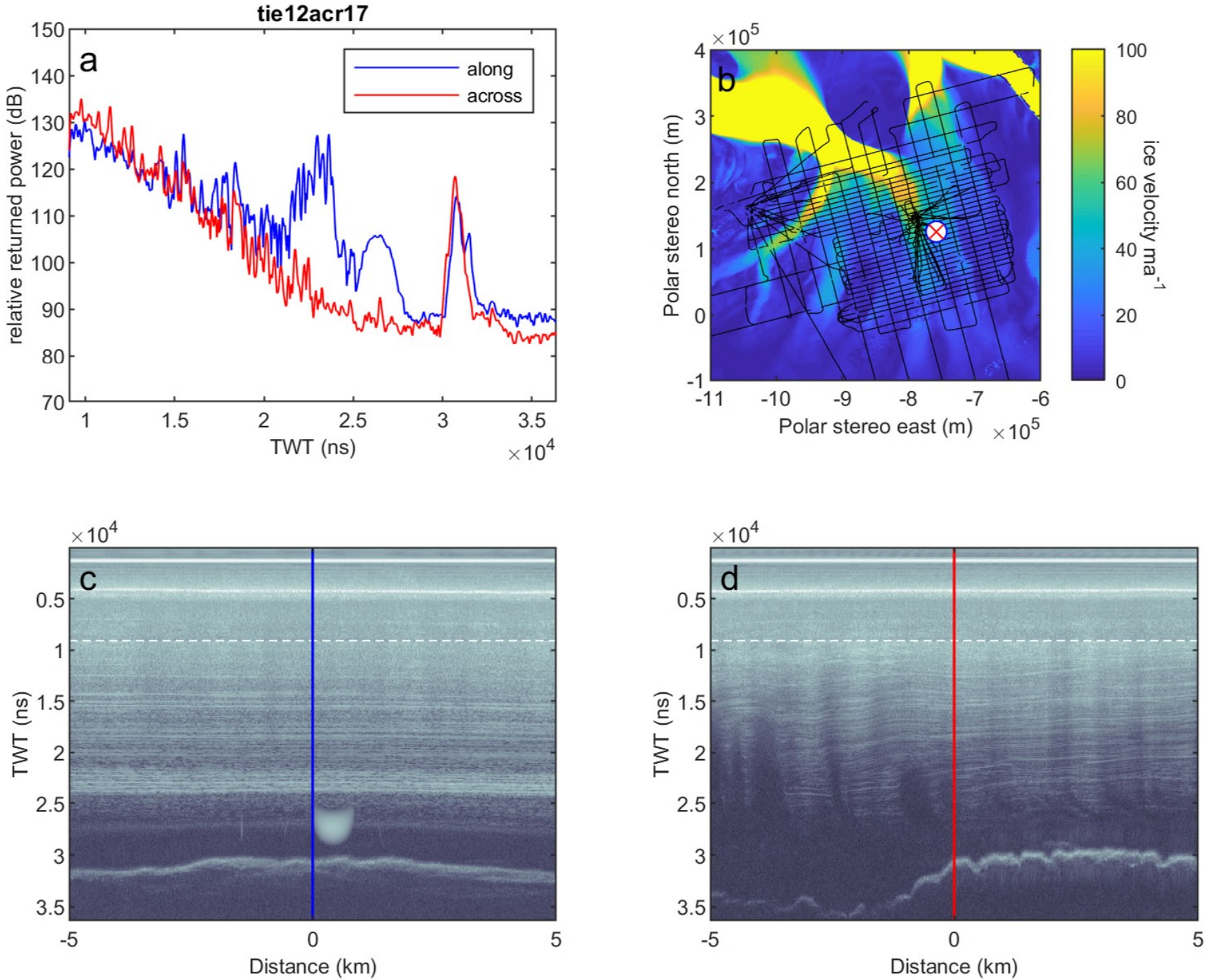

tie12acr15
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

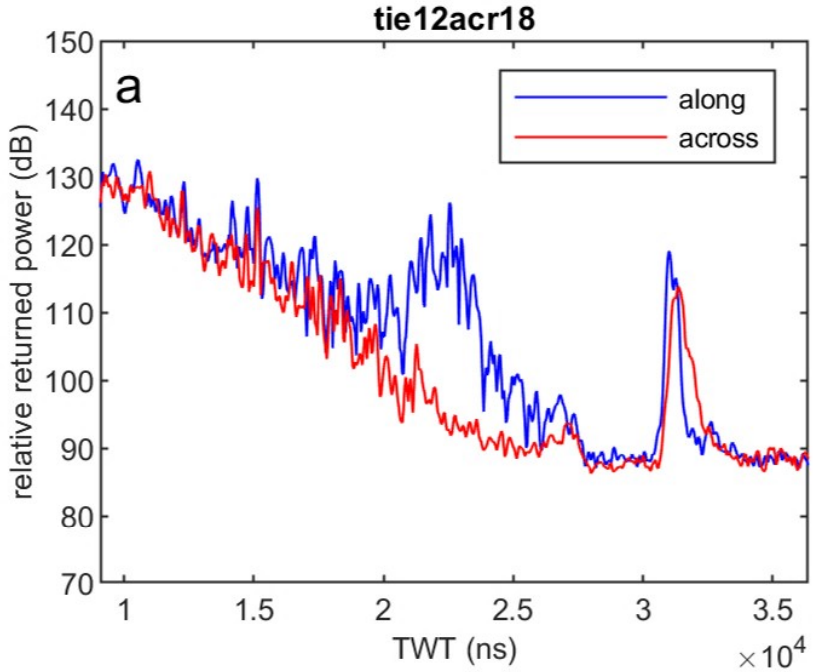

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

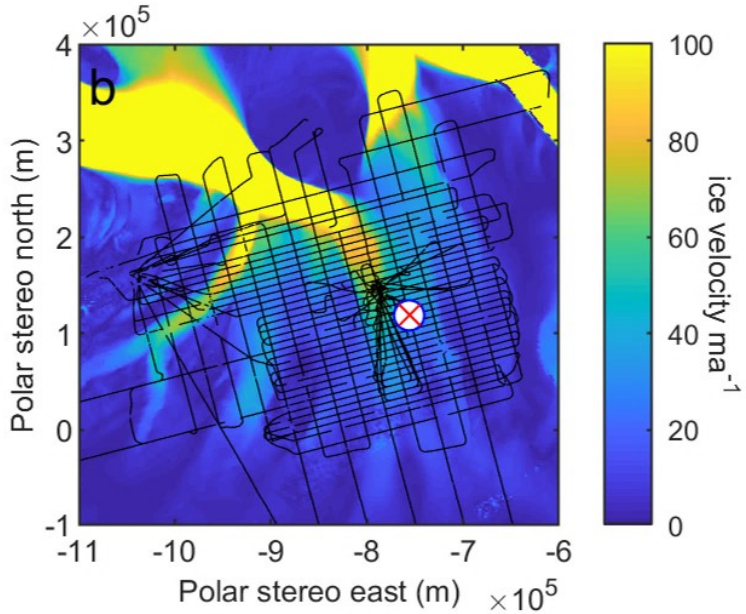

c
×10^4
TWT (ns)
Distance (km)

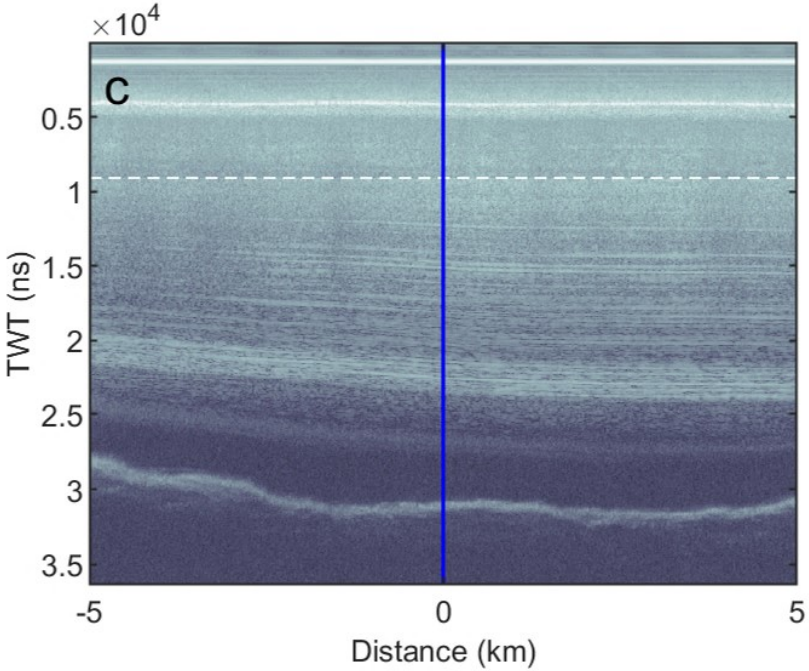

d
×10^4
TWT (ns)
Distance (km)

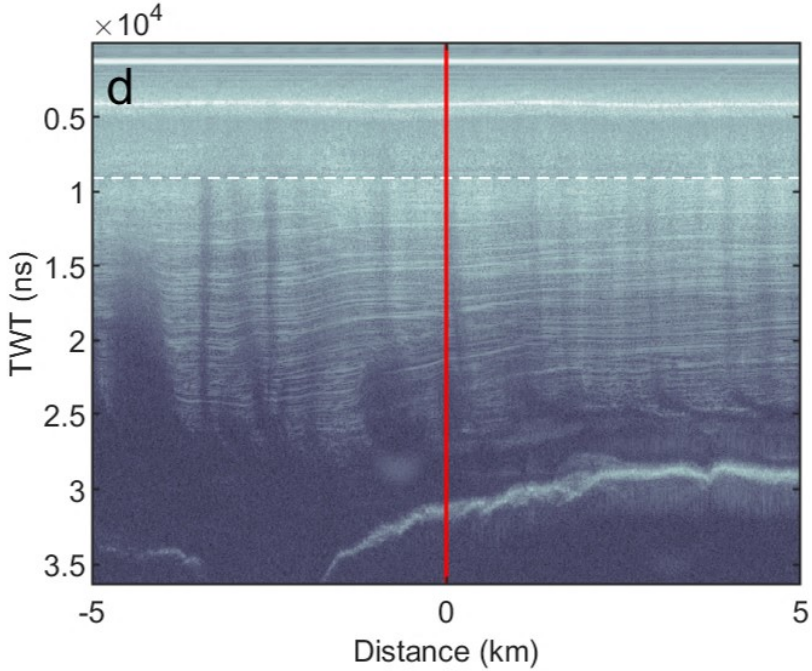

tie12acr16
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

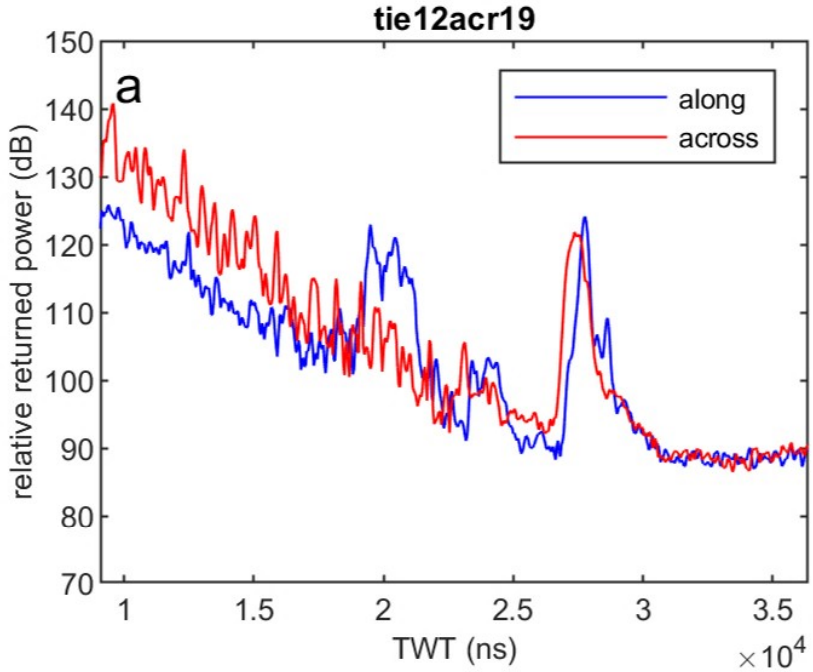

tie12acr17
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
d
TWT (ns)
Distance (km)

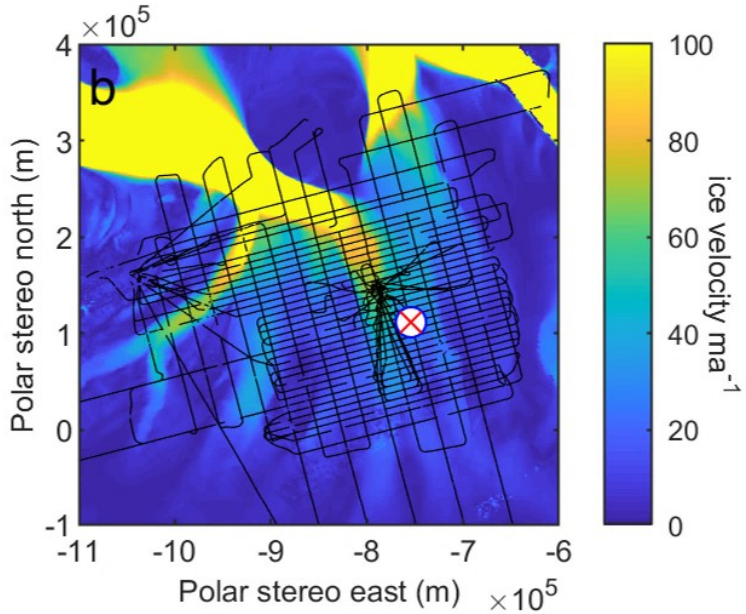

tie12acr18
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

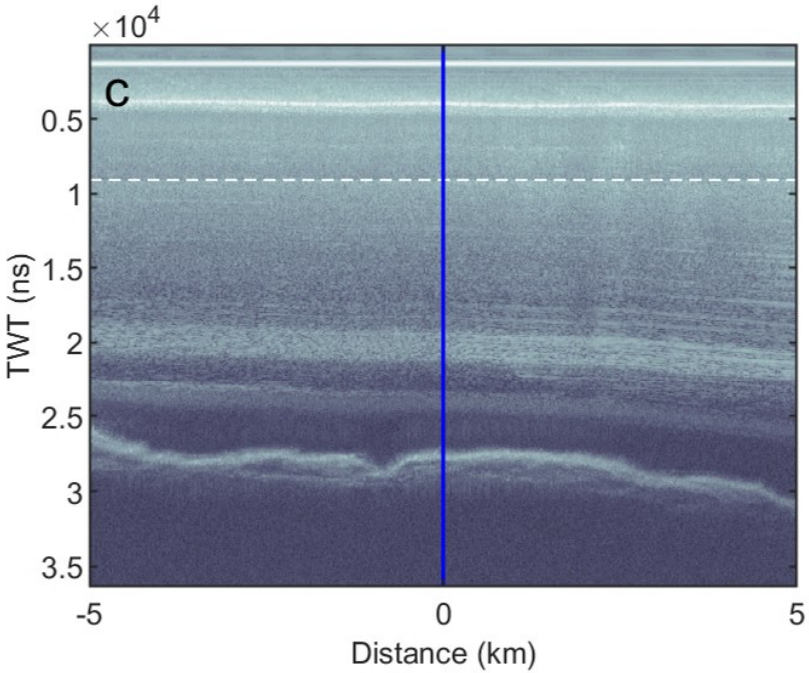

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

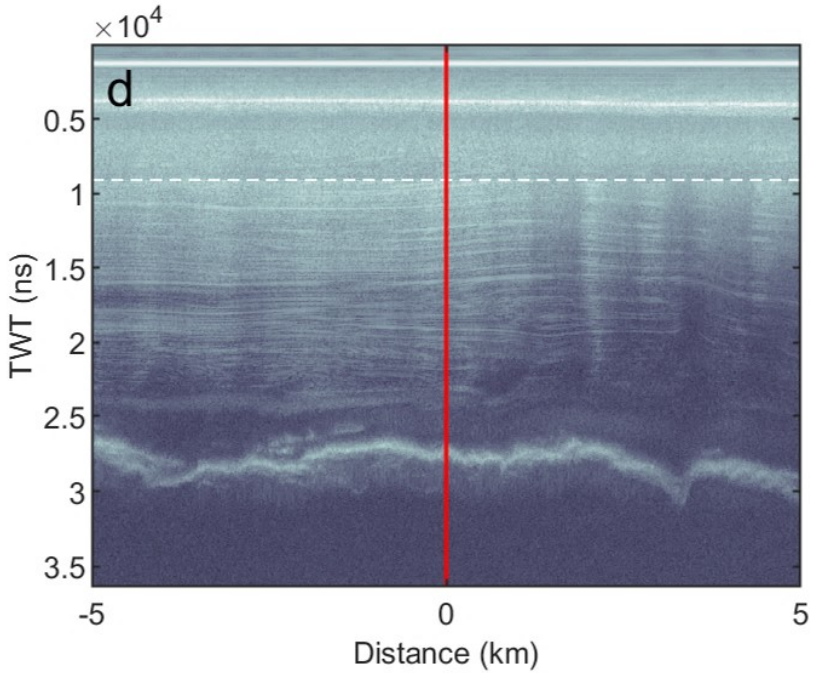

c
×10^4
TWT (ns)
Distance (km)

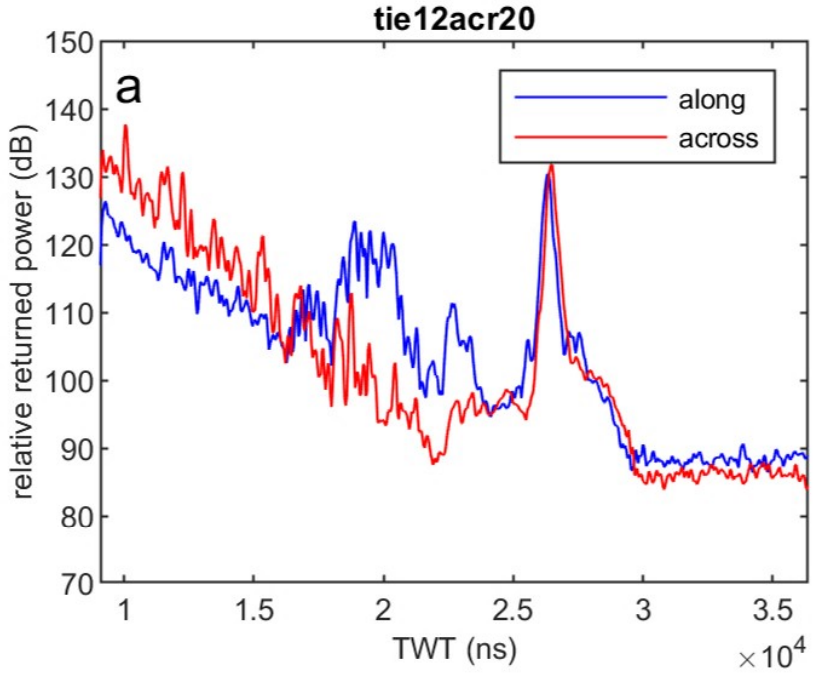

d
×10^4
TWT (ns)
Distance (km)

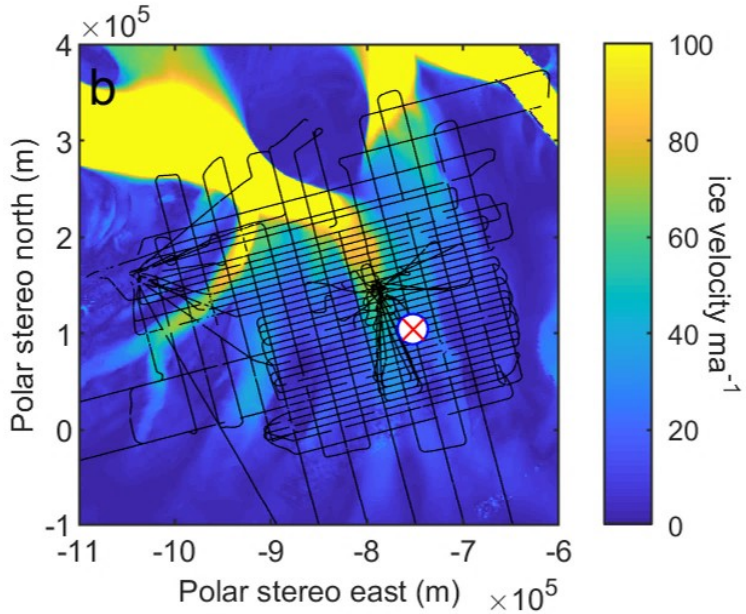

tie12acr19
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

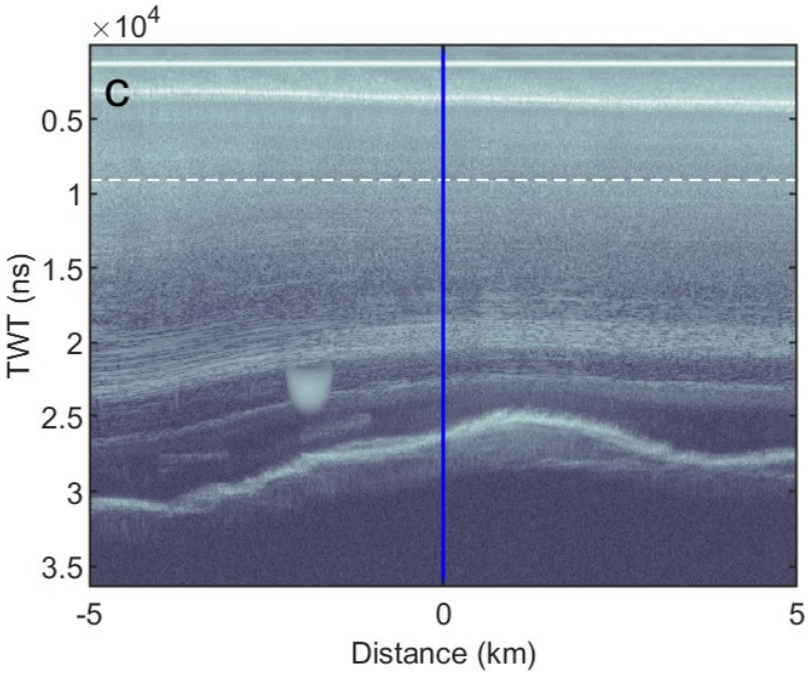

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

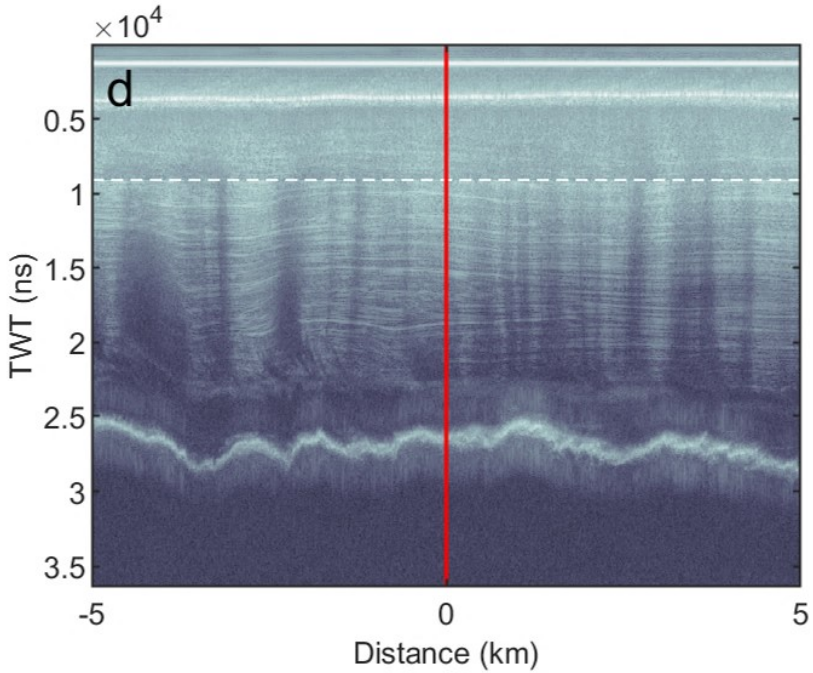

c
×10^4
TWT (ns)
Distance (km)

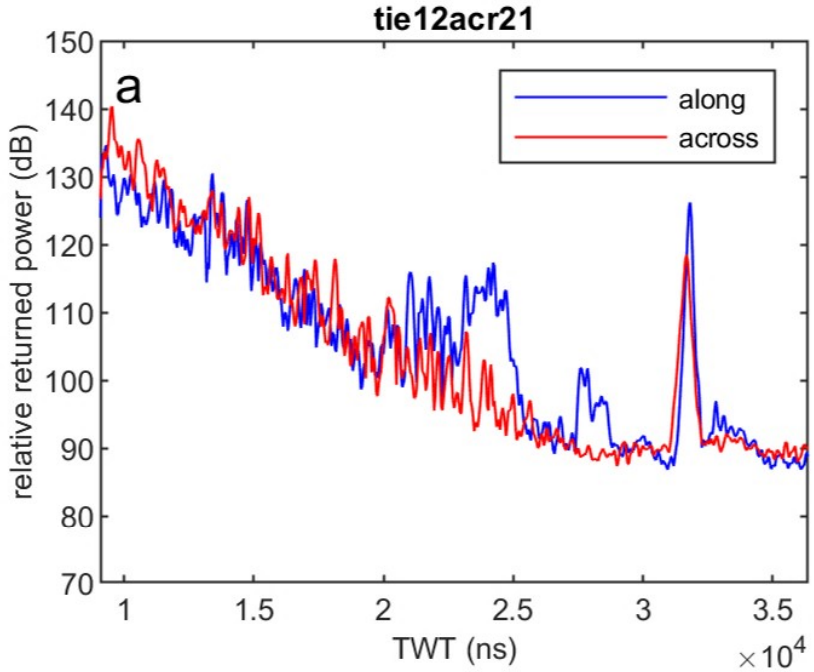

d
×10^4
TWT (ns)
Distance (km)

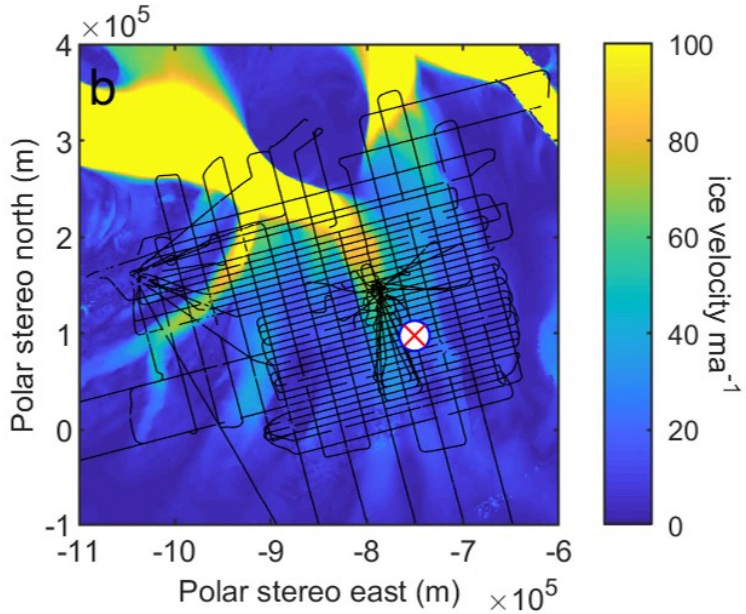

tie12acr20
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

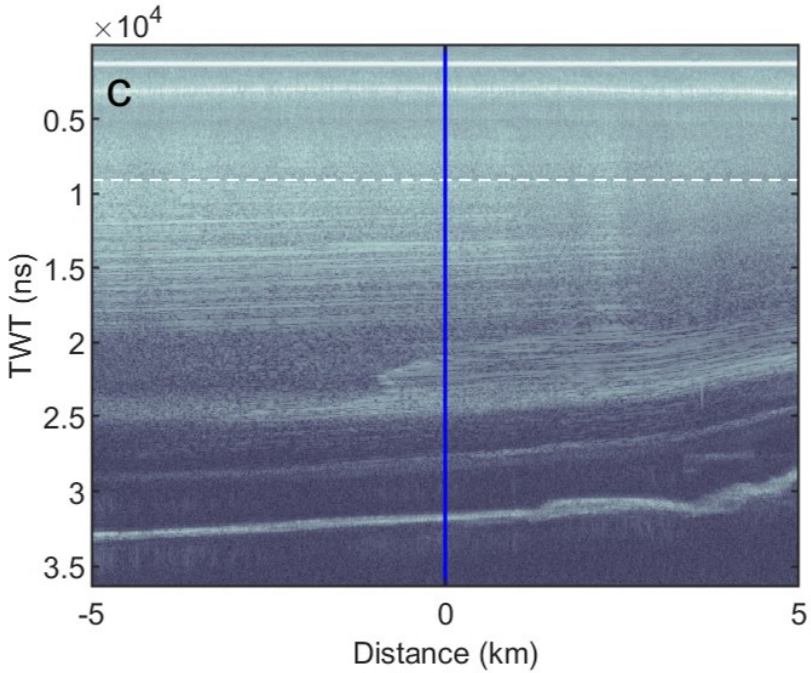

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

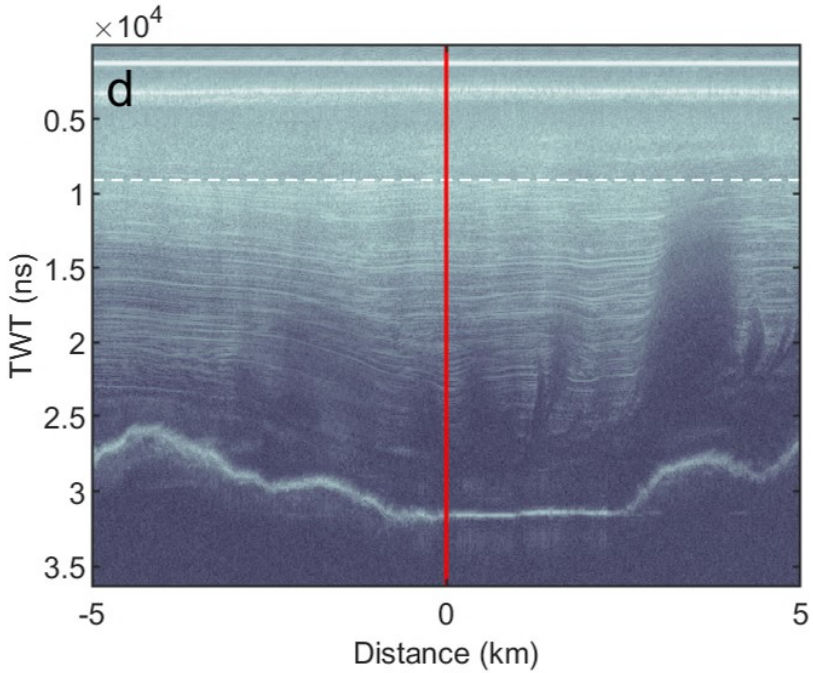

c
×10^4
TWT (ns)
Distance (km)

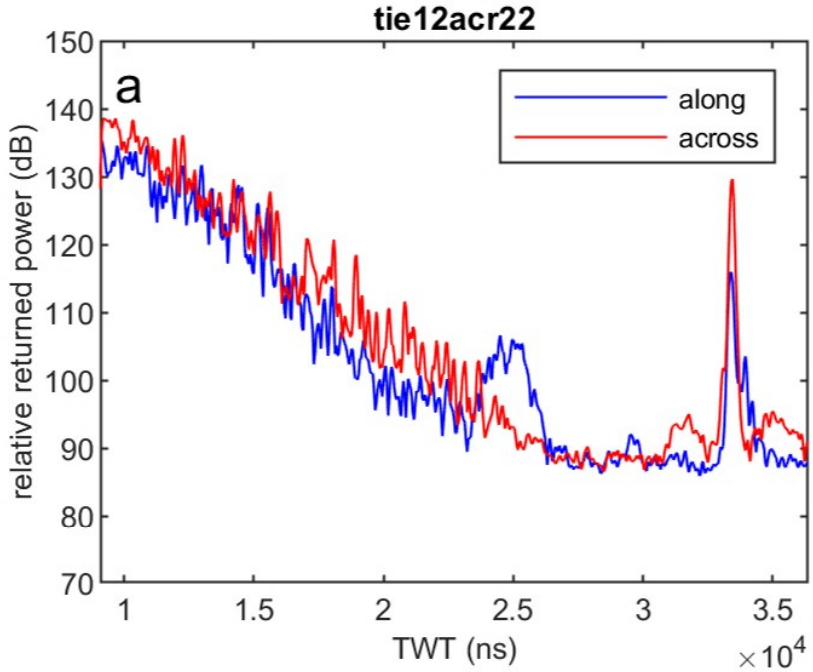

d
×10^4
TWT (ns)
Distance (km)

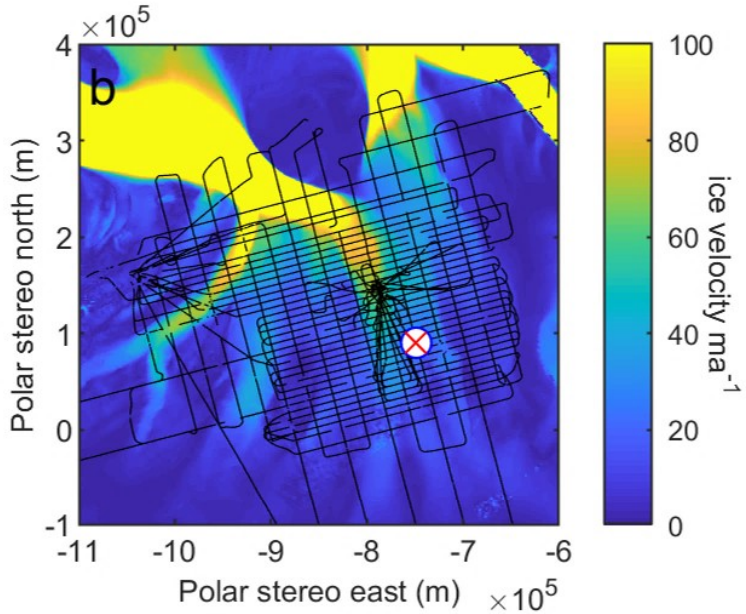

tie12acr21
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

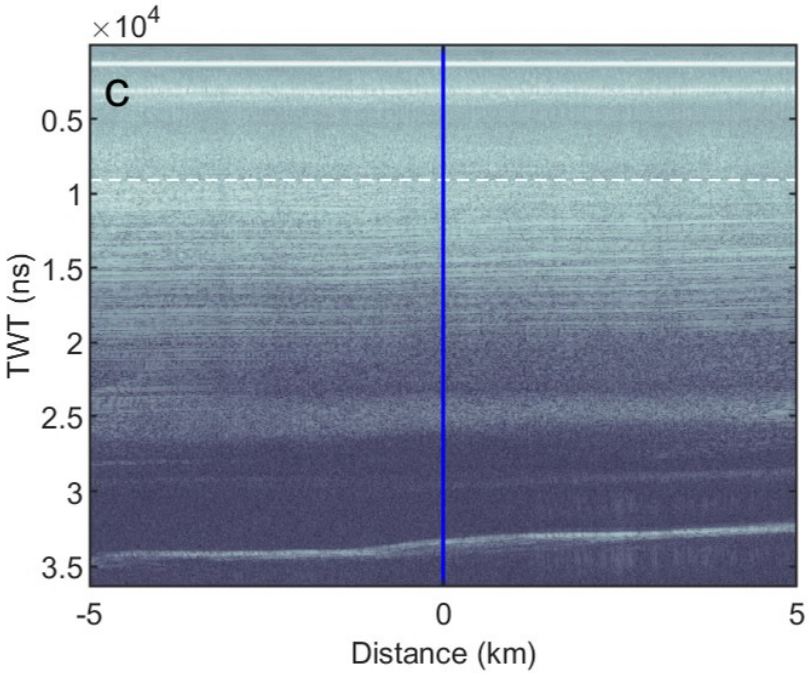

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

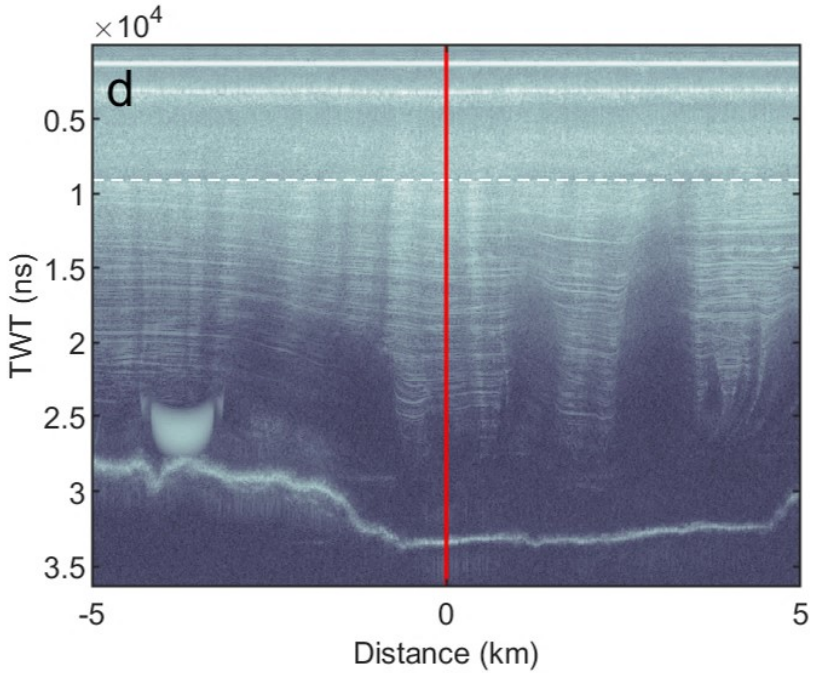

c
×10^4
TWT (ns)
Distance (km)

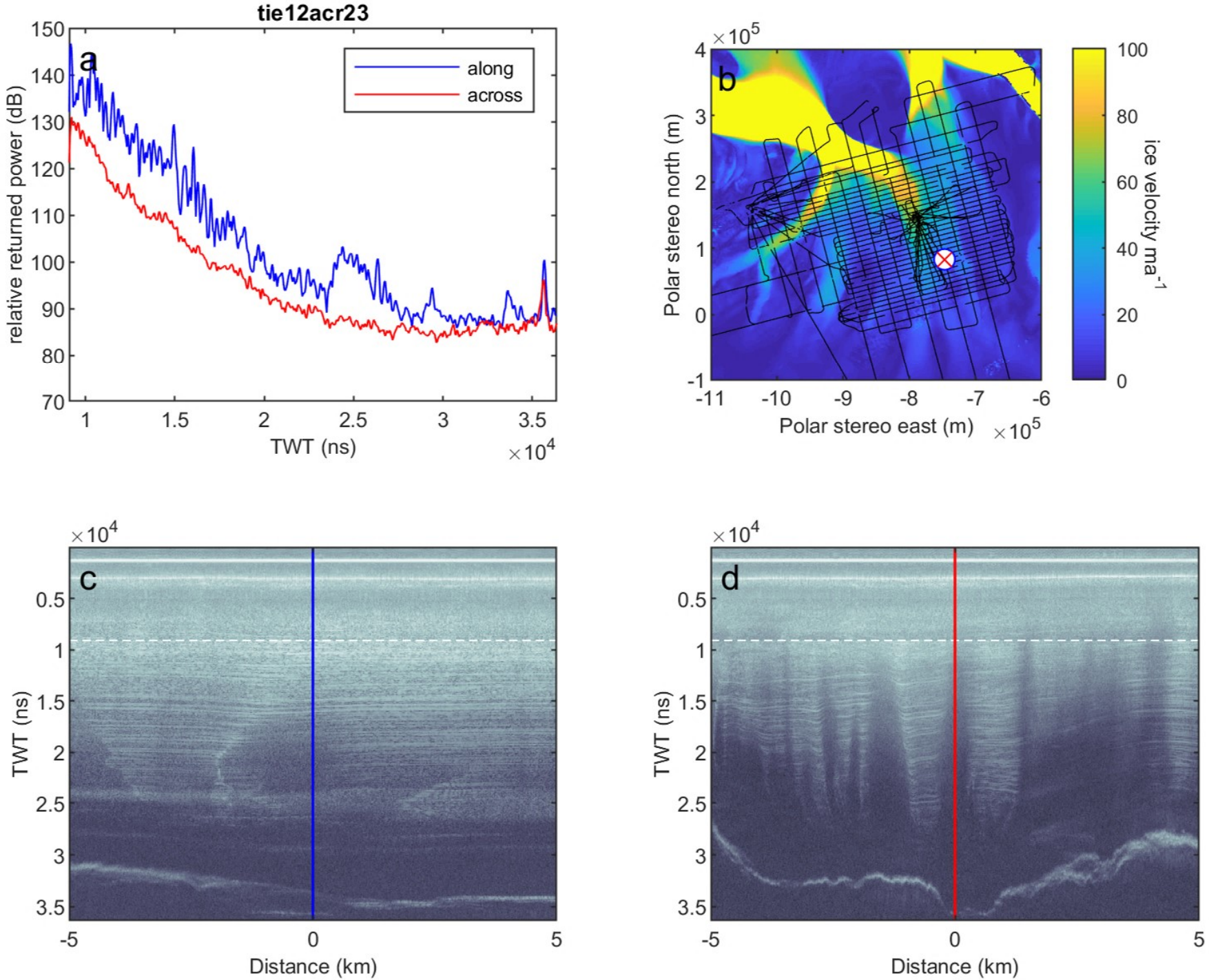

d
×10^4
TWT (ns)
Distance (km)

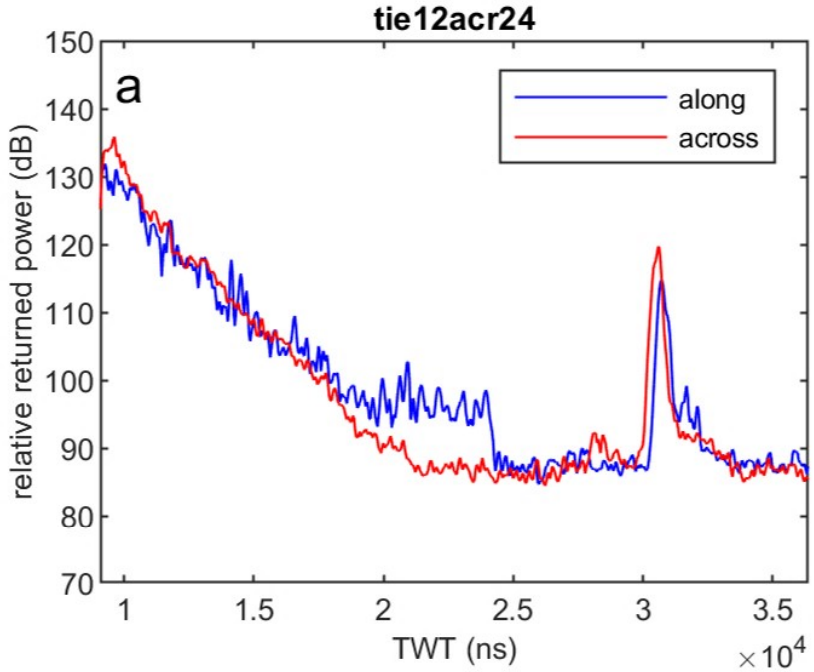

tie12acr22
a
along
across
relative returned power (dB)
TWT (ns)
×10^4

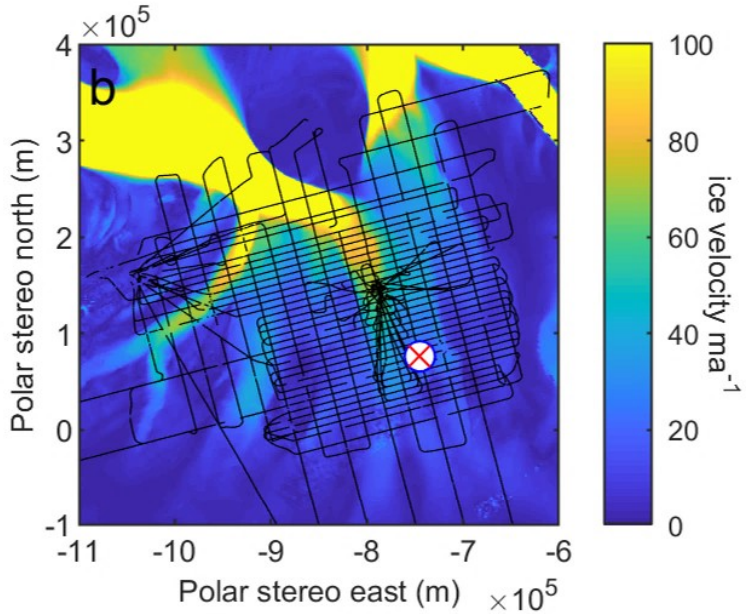

b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1

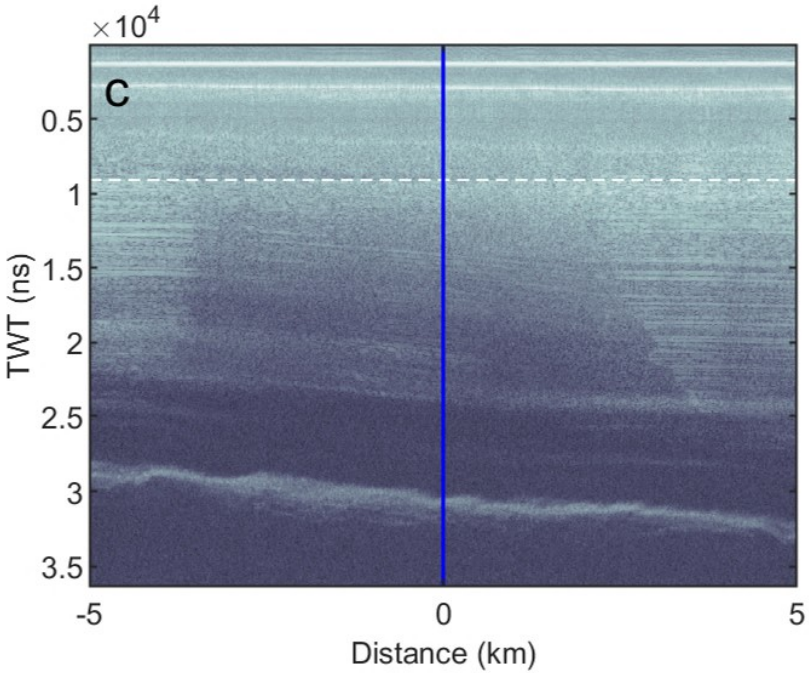

c
×10^4
TWT (ns)
Distance (km)

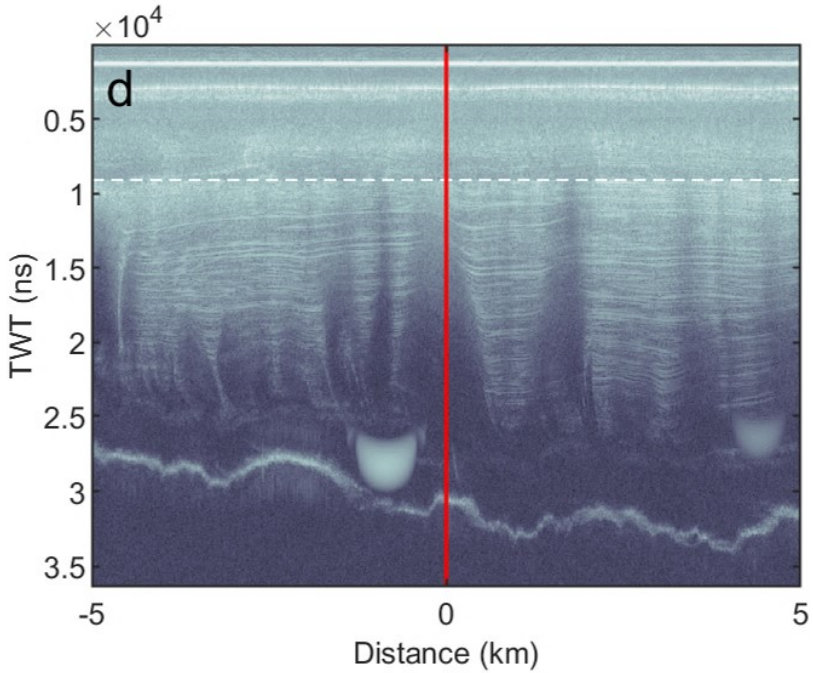

d
×10^4
TWT (ns)
Distance (km)


tie12acr23
a
along
across
relative returned power (dB)
TWT (ns)
×10^4
b
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1
c
TWT (ns)
Distance (km)
d
TWT (ns)
Distance (km)


tie12acr24
a
along
across
relative returned power (dB)
TWT (ns)
×10^4


b
×10^5
Polar stereo north (m)
Polar stereo east (m)
×10^5
ice velocity ma^-1


c
×10^4
TWT (ns)
Distance (km)


d
×10^4
TWT (ns)
Distance (km)