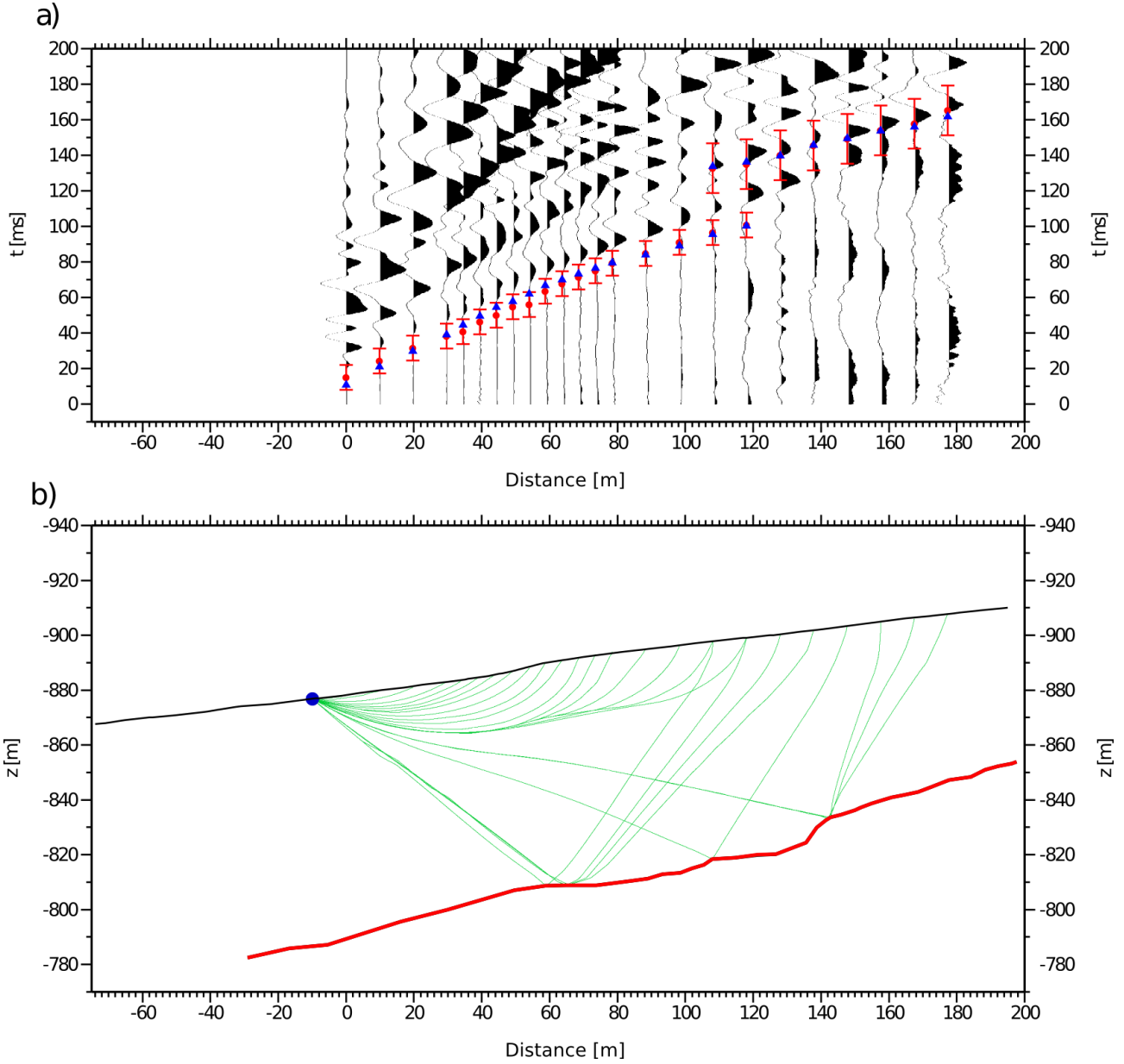


1 **Supplementary material**

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3 In the following we present a number of data fitting and their respective travel-times which are
4 calculated based on the 2D tomographic models.

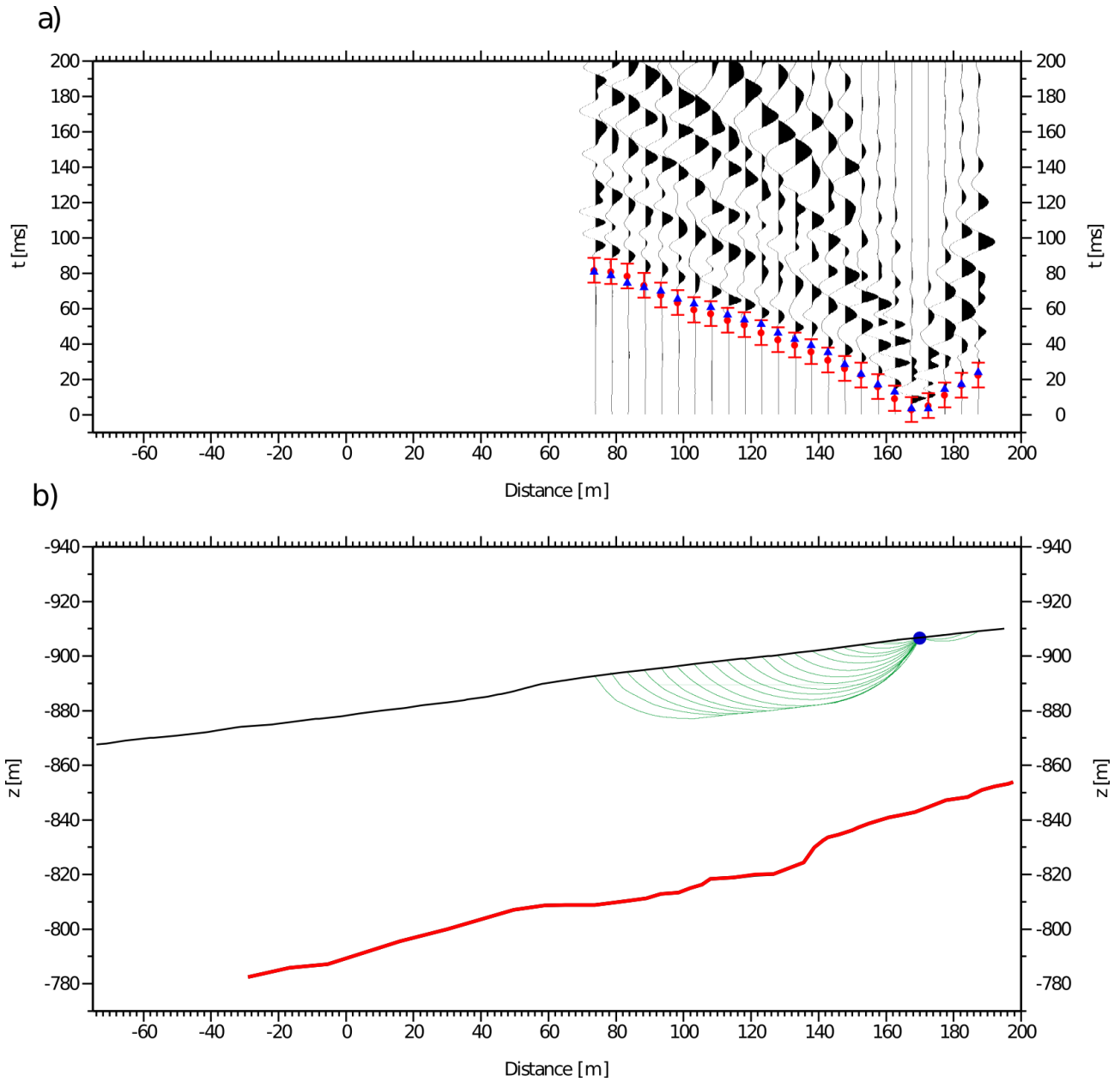
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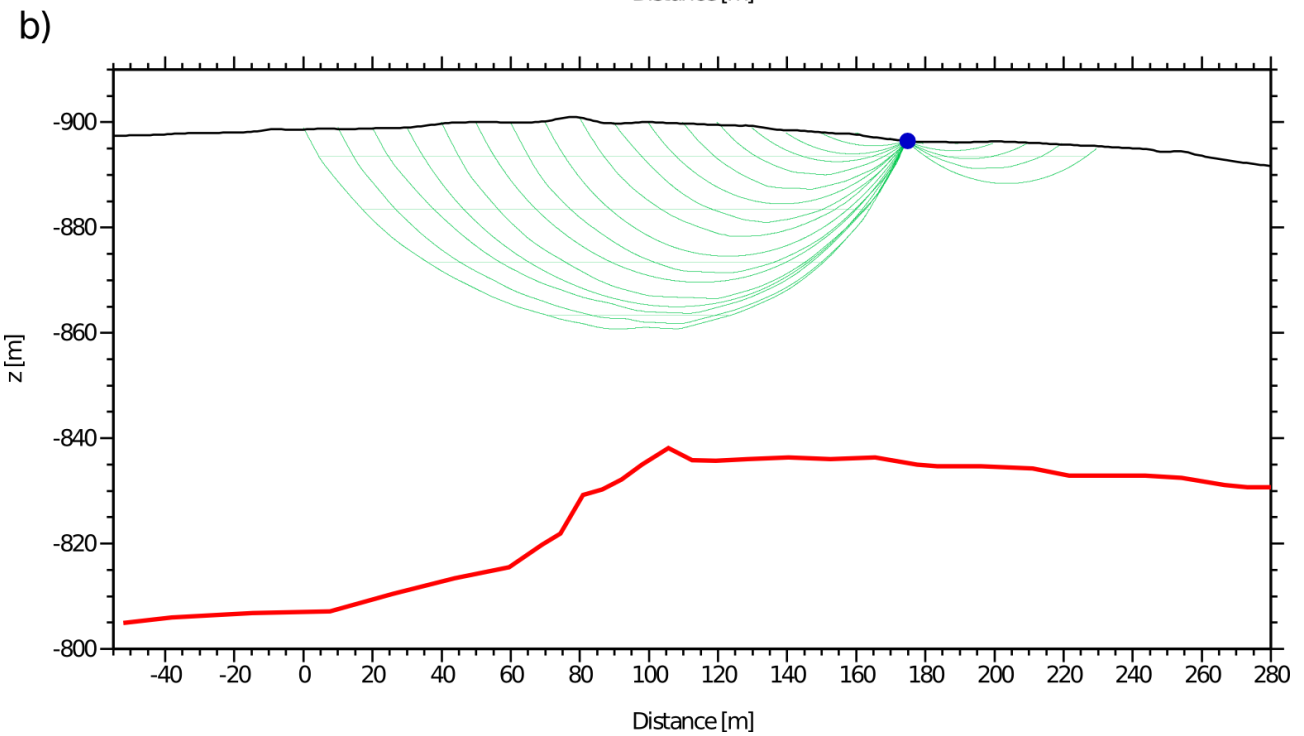
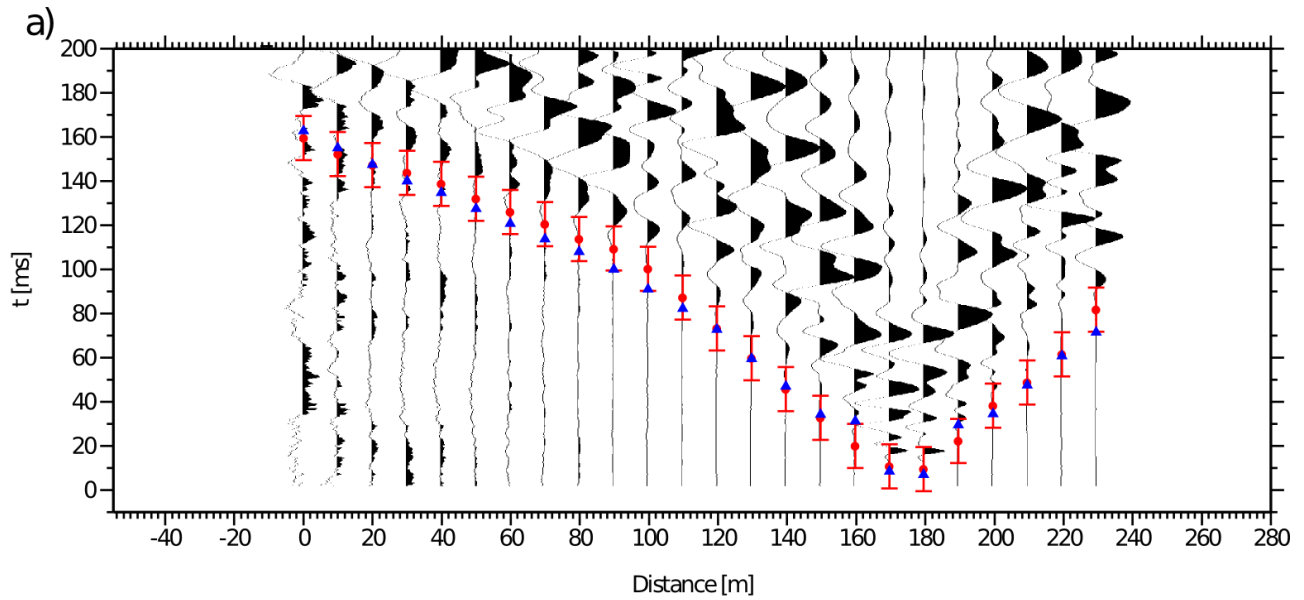
7

8 **Fig. S1. Shot at $x=0$ along seismic profile P1.** (a) Seismic record corresponding to the shot located
9 at distance $x=0$ along the profile P1. Blue triangles denote the predicted travel-times based on the
10 2D tomographic model shown in Fig. 5, while the red bars correspond to travel time picks
11 uncertainties. (b) Associated ray tracing. As in the following figures, the red curve corresponds to
12 the reflector interpreted as the top of the basement. The blue dots denote the location of the shots.



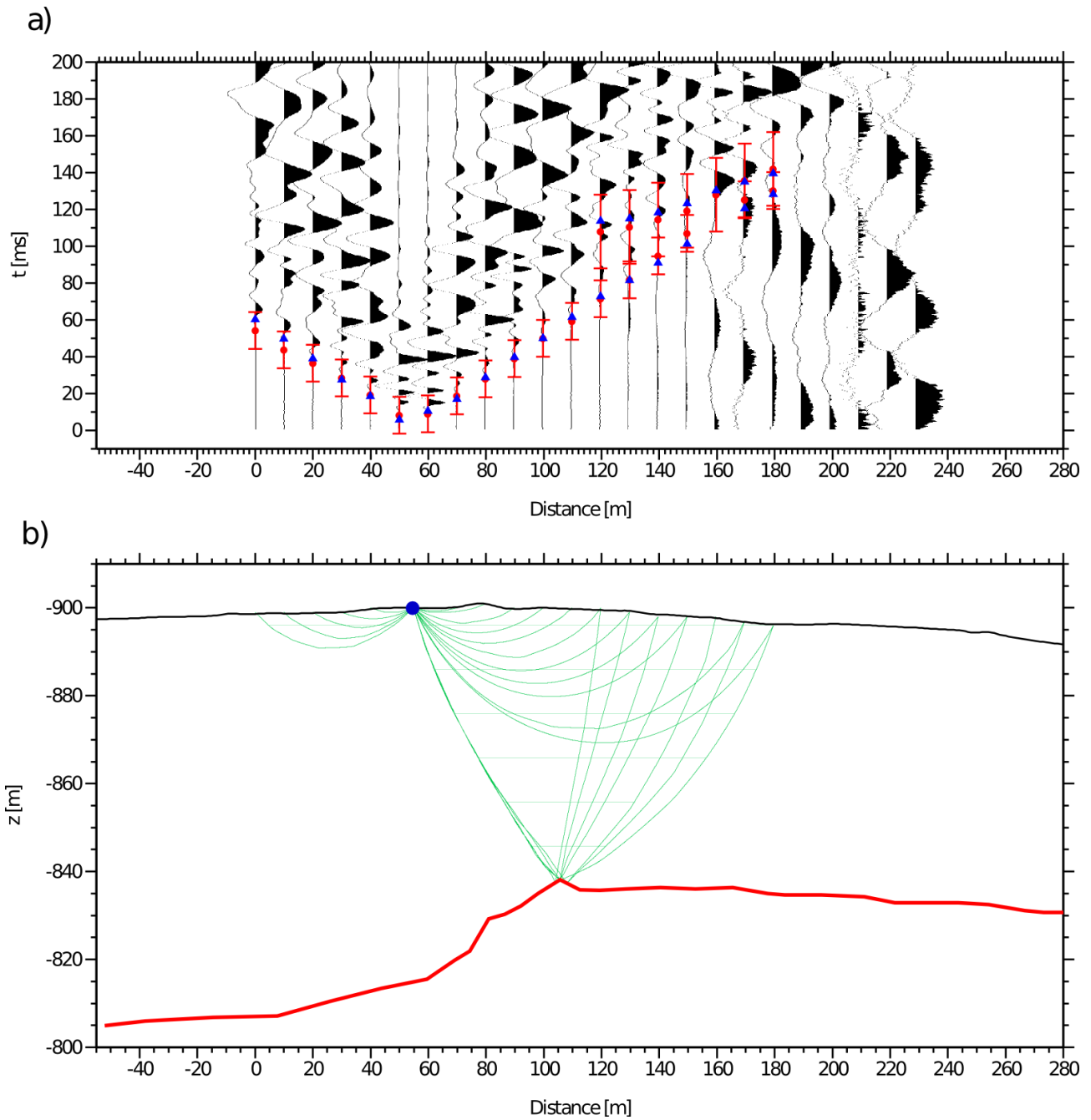
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3 **Fig. S2. Shot at $x=170$ along seismic profile P1. (a)** Seismic record corresponding to the shot
 4 located at distance $x=170$ along the profile P1. Blue triangles denote the predicted travel-times
 5 based on the 2D tomographic model shown in Fig. 5, while the red bars correspond to travel time
 6 picks uncertainties. **(b)** Associated ray tracing.



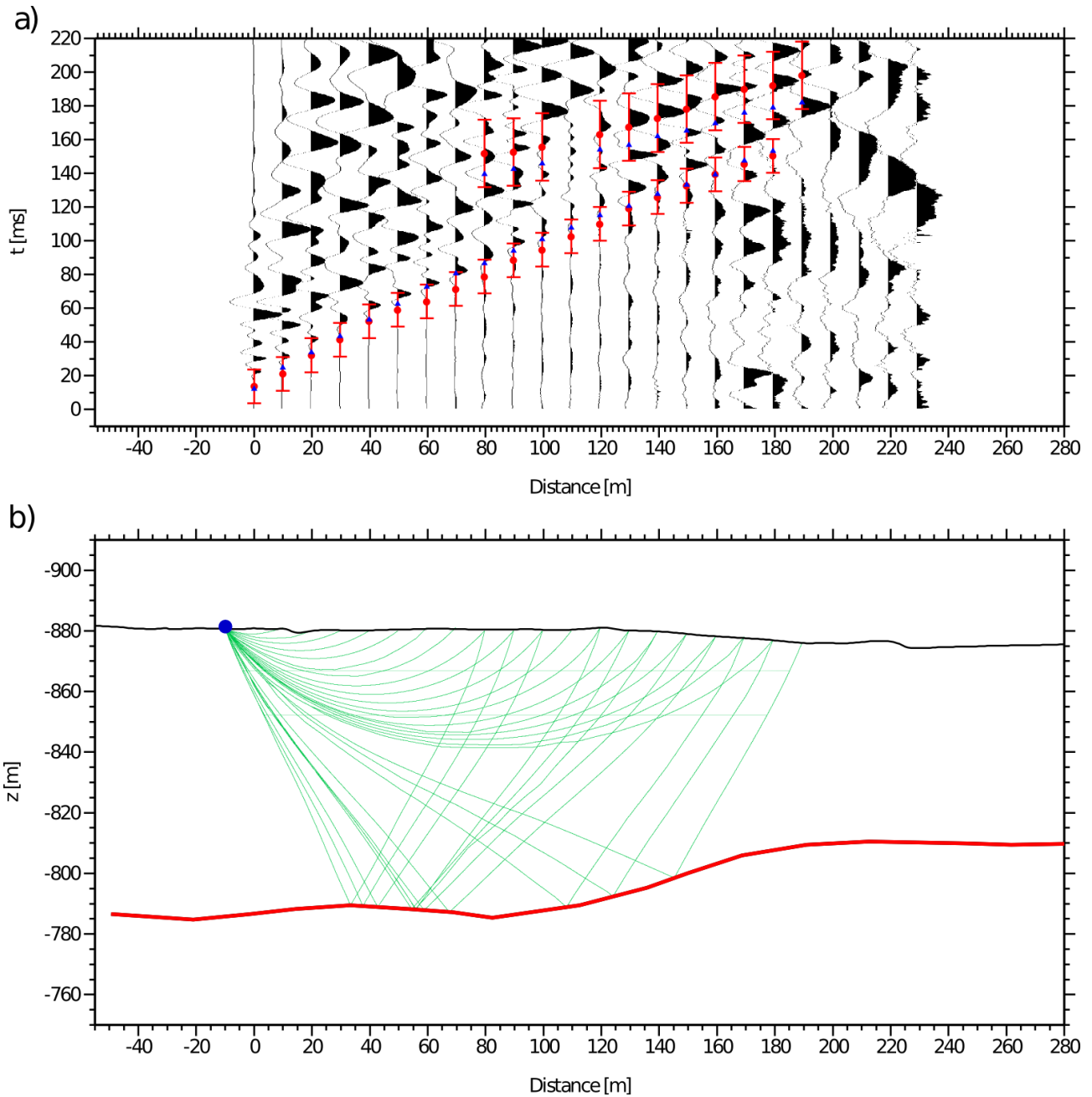
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3 **Fig. S3. Shot at $x=175$ along seismic profile P2.** (a) Seismic record corresponding to the shot
 4 located at distance $x=175$ along the profile P2. Blue triangles denote the predicted travel-times
 5 based on the 2D tomographic model shown in Fig. 6, while the red bars correspond to travel time
 6 picks uncertainties. (b) Associated ray tracing.



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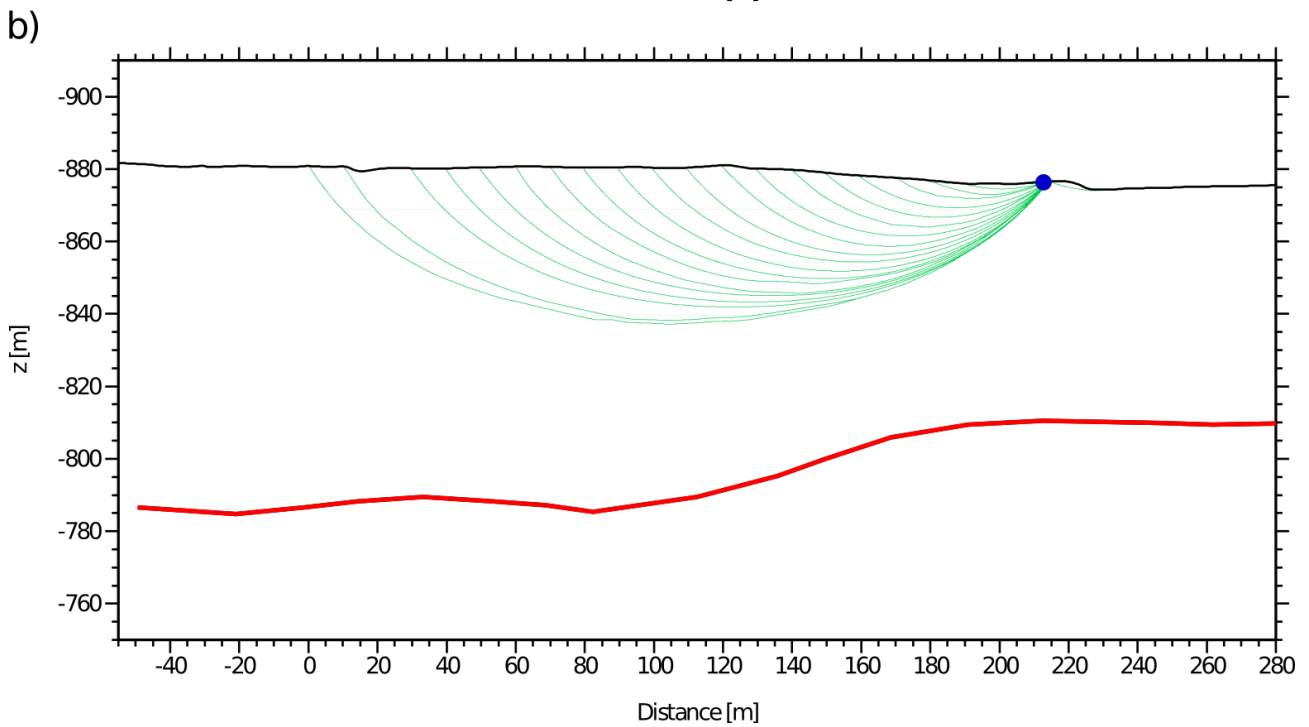
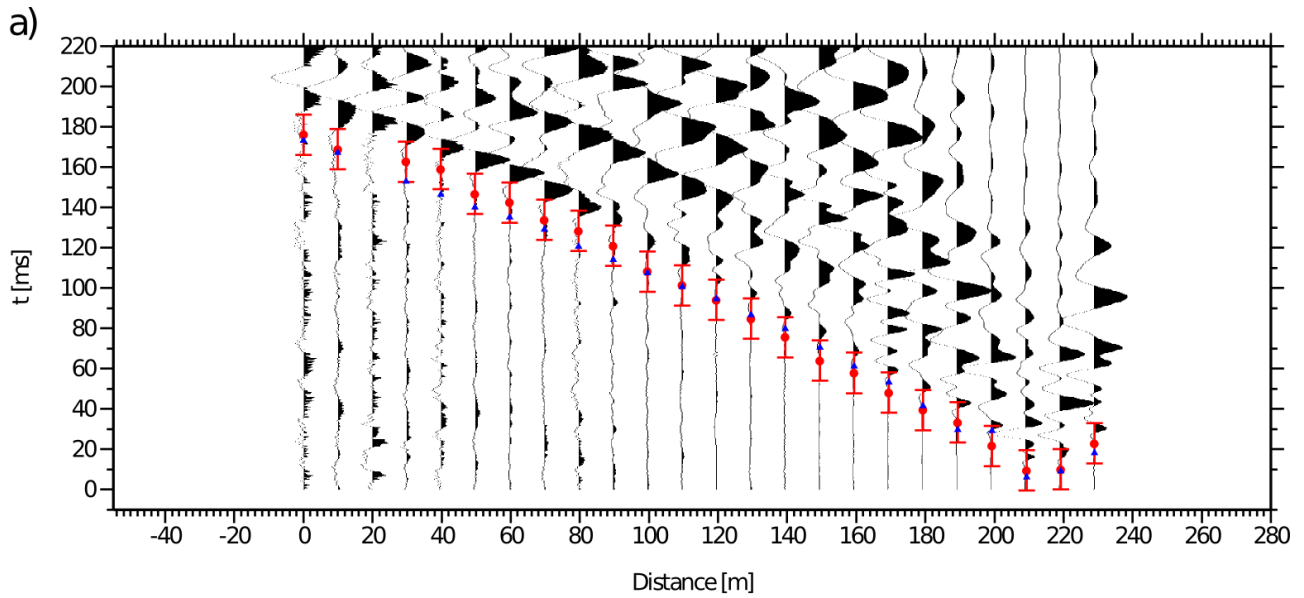
3 **Fig. S4. Shot at $x=55$ along seismic profile P2. (a)** Seismic record corresponding to the shot
 4 located at distance $x=55$ along the profile P2. Blue triangles denote the predicted travel-times based
 5 on the 2D tomographic model shown in Fig. 6, while the red bars correspond to travel time picks
 6 uncertainties. **(b)** Associated ray tracing.



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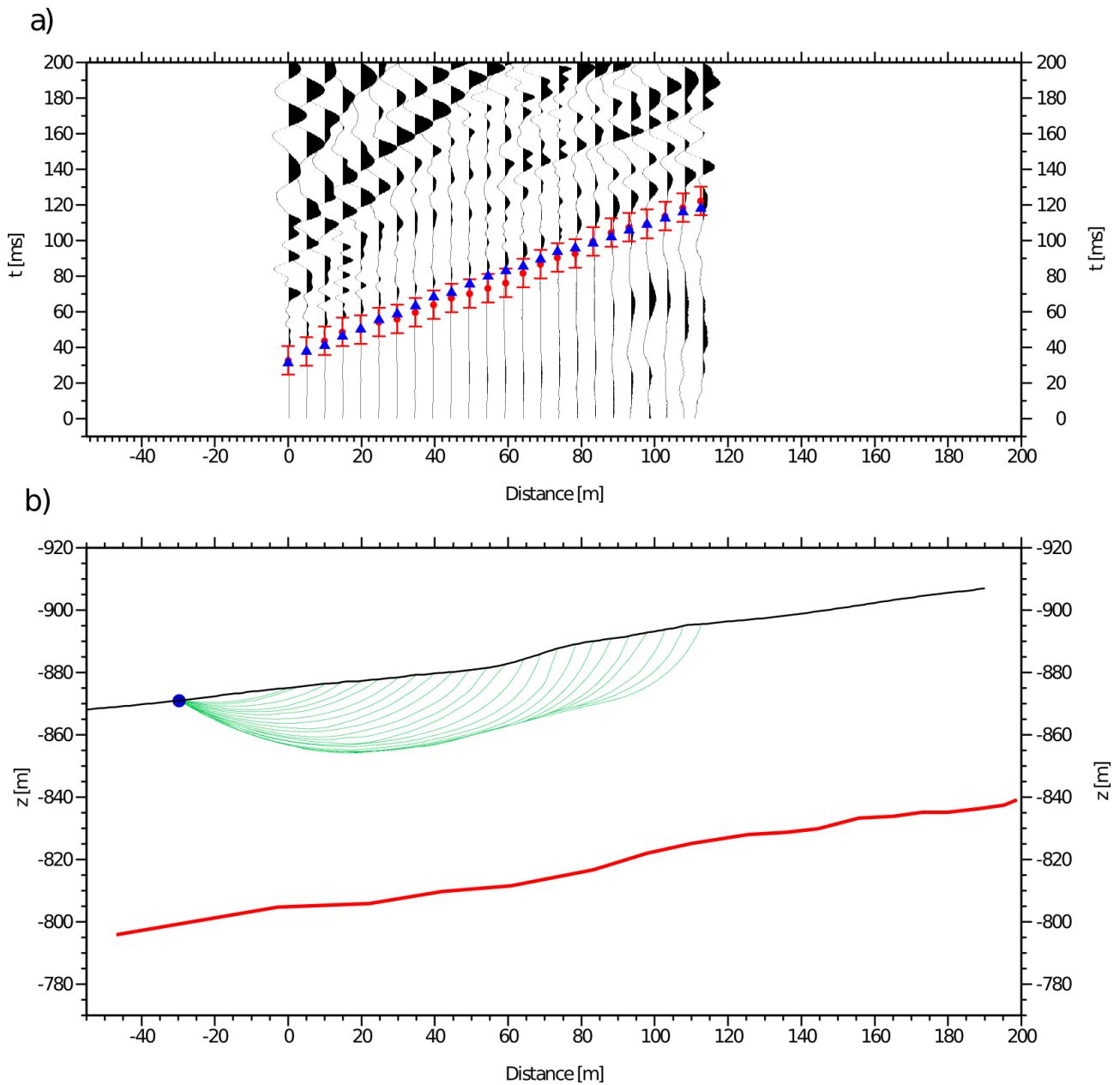
2

3 **Fig. S5. Shot at $x=-10$ along seismic profile P3.** (a) Seismic record corresponding to the shot
 4 located at distance $x=-10$ along the profile P3. Blue triangles denote the predicted travel-times
 5 based on the 2D tomographic model shown in Fig. 7, while the red bars correspond to travel time
 6 picks uncertainties. (b) Associated ray tracing.



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3 **Fig. S6. Shot at $x=215$ along seismic profile P3. (a)** Seismic record corresponding to the shot
 4 located at distance $x=215$ along the profile P3. Blue triangles denote the predicted travel-times
 5 based on the 2D tomographic model shown in Fig. 7, while the red bars correspond to travel time
 6 picks uncertainties. **(b)** Associated ray tracing.



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Fig. S7. Shot at $x=-30$ along seismic profile P4. (a) Seismic record corresponding to the shot located at distance $x=-30$ along the profile P4. Blue triangles denote the predicted travel-times based on the 2D tomographic model shown in Fig. 8, while the red bars correspond to travel time picks uncertainties. **(b)** Associated ray tracing.