

Passfjellbreen Ice Cave

Reconstruction Uncertainty: 10

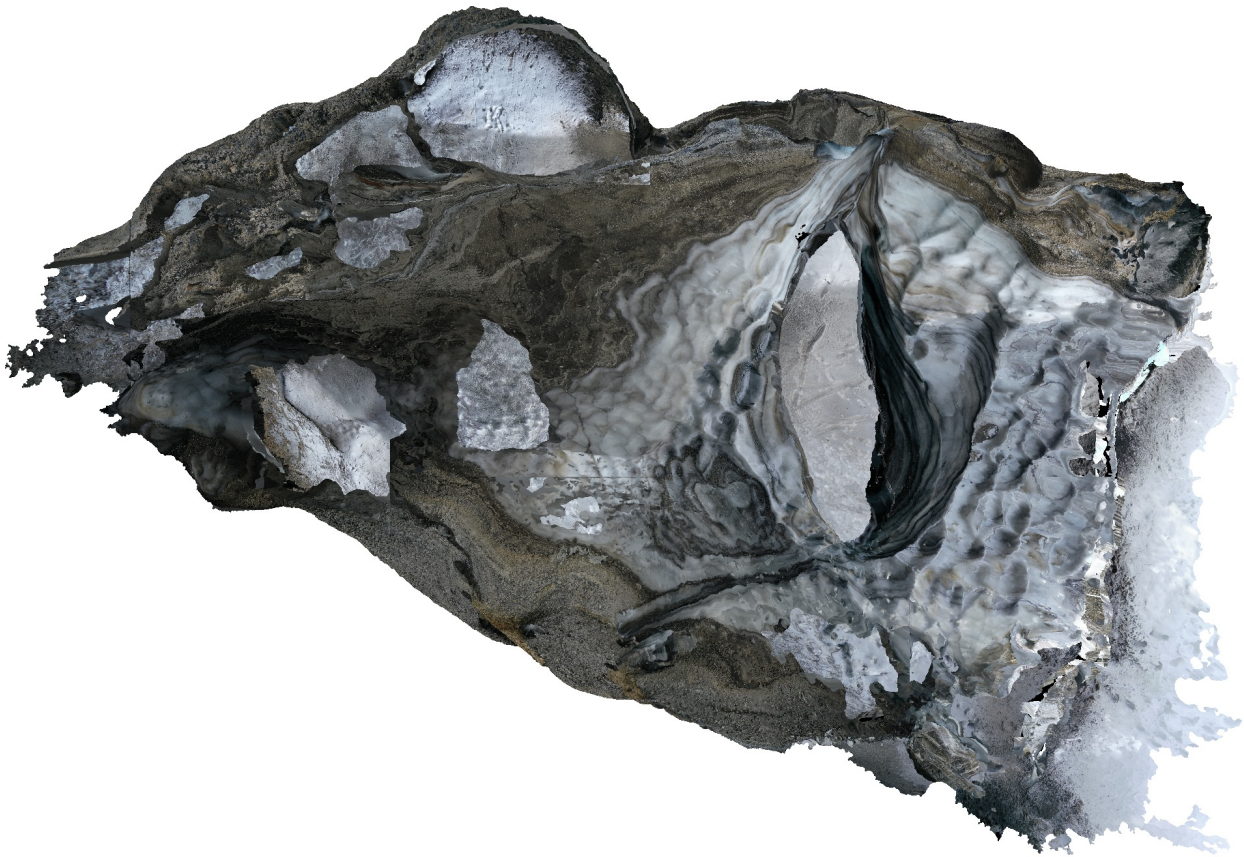
Projection accuracy: 3

Reprojection Error: 0,3

Dense Cloud Confidence 2-255

Filter component size 99%

23 February 2022



Survey Data

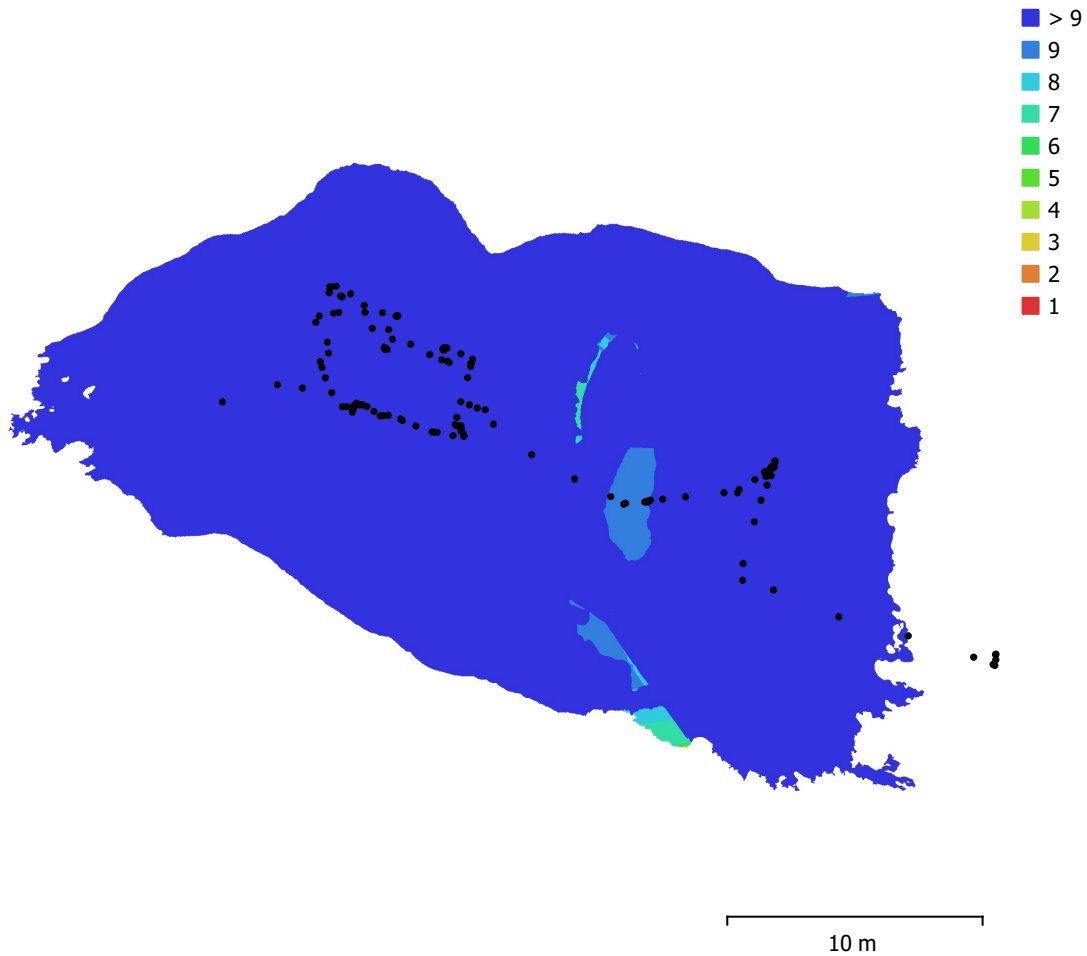


Fig. 1. Camera locations and image overlap.

Number of images:	156	Camera stations:	151
Flying altitude:	8.9 m	Tie points:	163,109
Ground resolution:	1.84 mm/pix	Projections:	454,758
Coverage area:	533 m ²	Reprojection error:	0.258 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
L1D-20c (10.26mm)	5472 x 3648	10.26 mm	2.41 x 2.41 μ m	No

Table 1. Cameras.

Camera Calibration

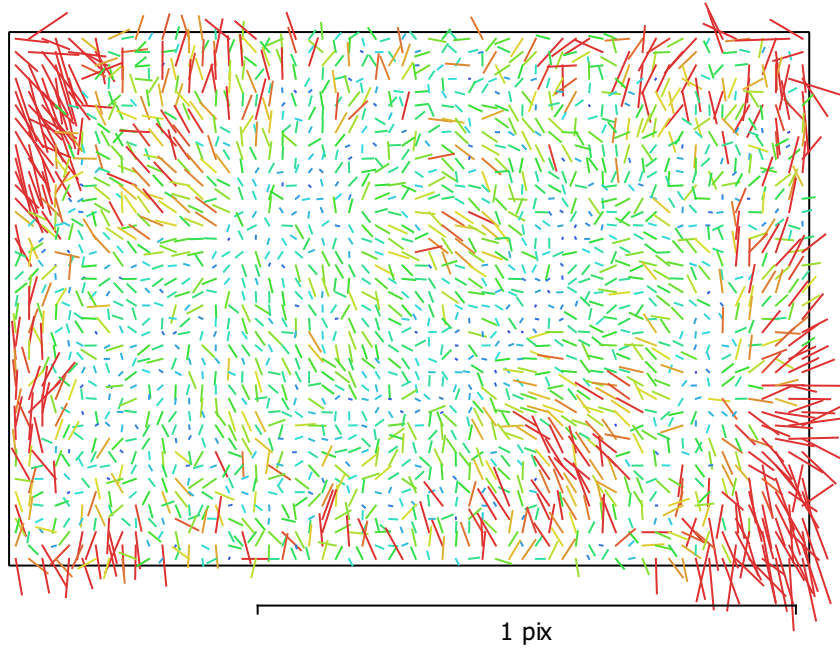


Fig. 2. Image residuals for L1D-20c (10.26mm).

L1D-20c (10.26mm)

151 images

Type	Resolution	Focal Length	Pixel Size
Frame	5472 x 3648	10.26 mm	2.41 x 2.41 μm
F:	4356.02		
Cx:	8.31317	B1:	0
Cy:	-51.8214	B2:	0
K1:	0.0106792	P1:	6.69385e-05
K2:	-0.00902311	P2:	-0.00353092
K3:	0.0100702	P3:	0
K4:	0	P4:	0

Camera Locations

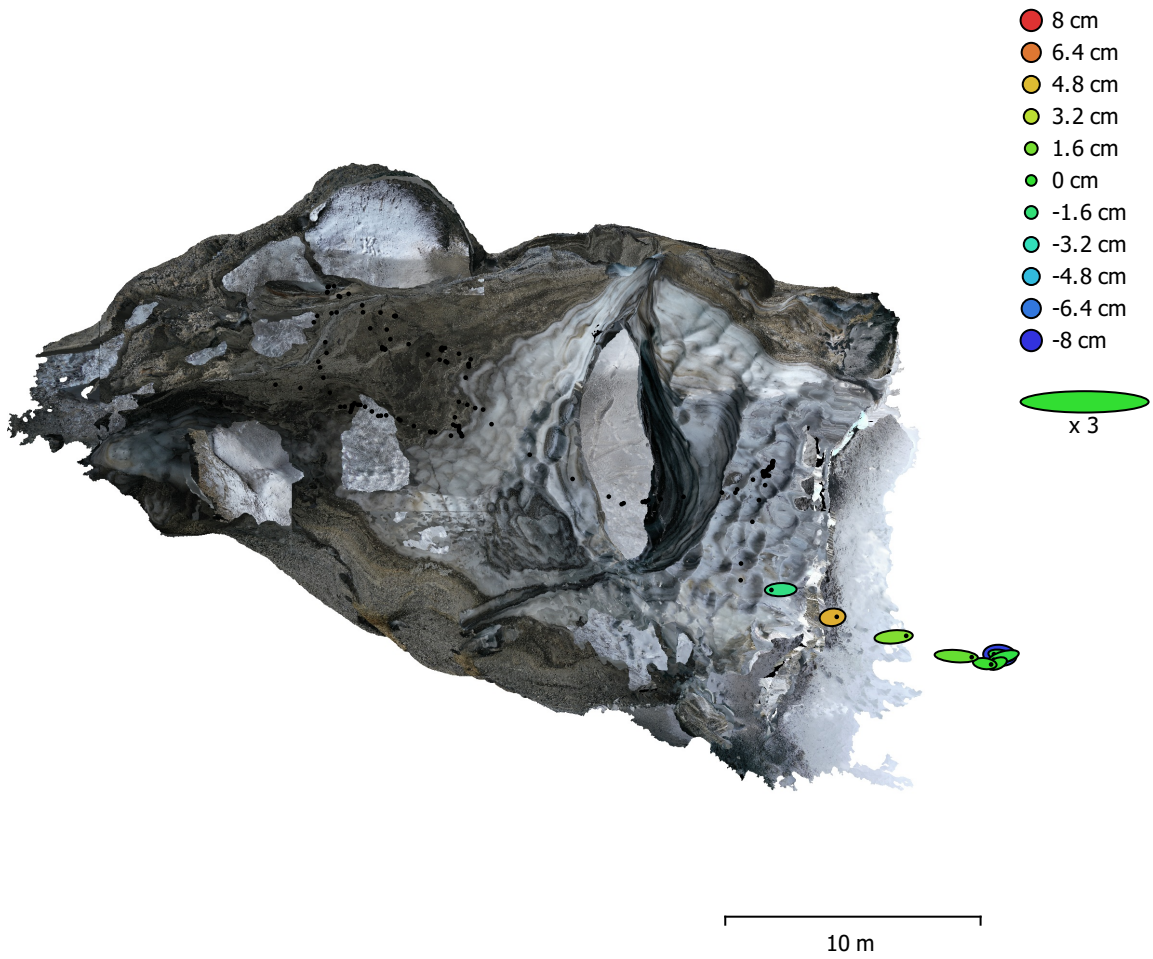


Fig. 3. Camera locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated camera locations are marked with a black dot.

X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total error (cm)
23.7595	3.4821	3.21985	24.0133	24.2282

Table 2. Average camera location error.

X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

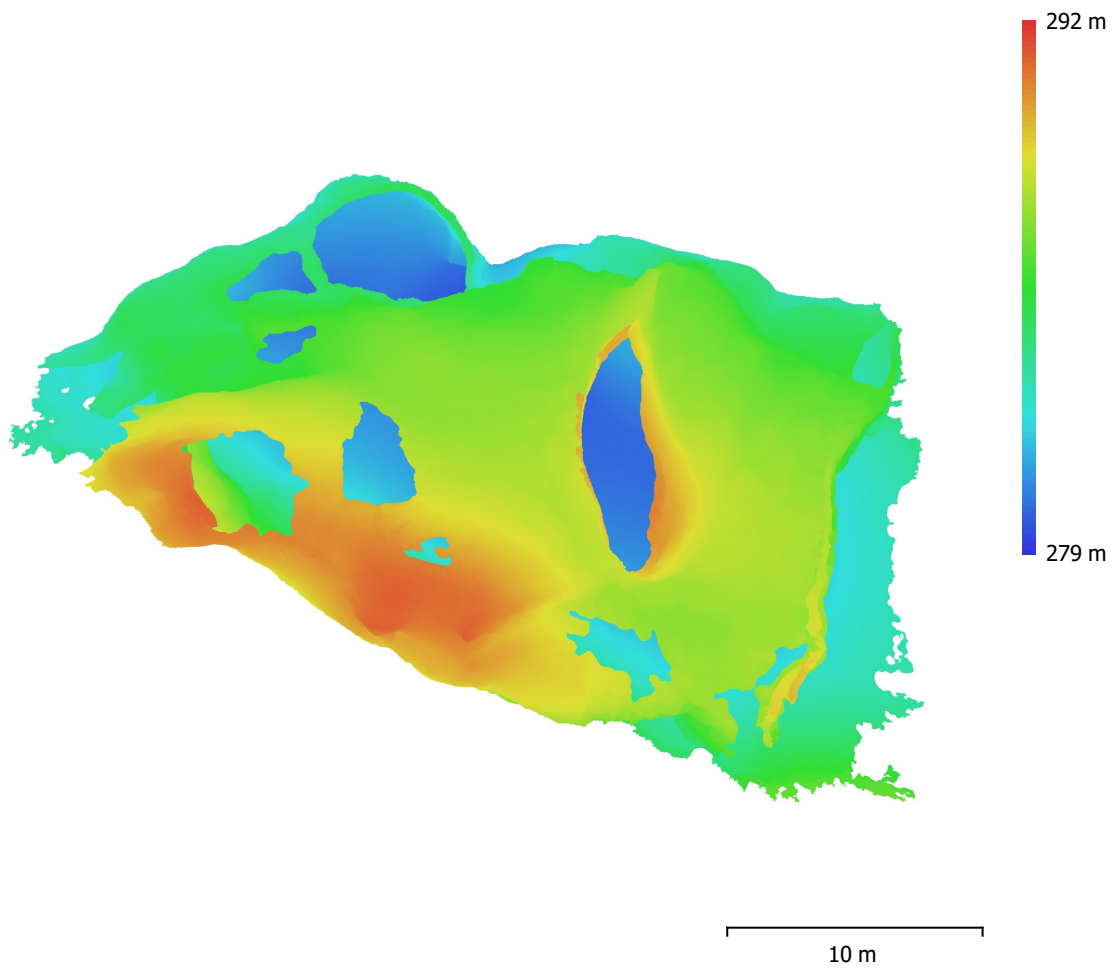


Fig. 4. Reconstructed digital elevation model.

Resolution: 7.35 mm/pix
Point density: 1.85 points/cm²

Processing Parameters

General

Cameras	156
Aligned cameras	151
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	163,109 of 853,535
RMS reprojection error	0.134014 (0.25825 pix)
Max reprojection error	0.299999 (1.50643 pix)
Mean key point size	1.85826 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.63304

Alignment parameters

Accuracy	Highest
Generic preselection	Yes
Reference preselection	No
Key point limit	60,000
Tie point limit	0
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	No
Matching time	8 minutes 34 seconds
Matching memory usage	150.36 MB
Alignment time	5 minutes 34 seconds
Alignment memory usage	395.49 MB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	36 seconds
Software version	1.7.2.12040
File size	89.49 MB

Depth Maps

Count	151
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	7 minutes 58 seconds
Memory usage	579.69 MB
Software version	1.7.2.12040
File size	315.01 MB

Dense Point Cloud

Points	19,834,722
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	7 minutes 58 seconds
Memory usage	579.69 MB
Dense cloud generation parameters	

Processing time	18 minutes 52 seconds
Memory usage	4.94 GB
Software version	1.7.2.12040
File size	430.08 MB
Model	
Faces	1,303,546
Vertices	656,843
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096 x 10, 4 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	7 minutes 58 seconds
Memory usage	579.69 MB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	7 minutes 50 seconds
Memory usage	10.84 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	3 minutes 43 seconds
UV mapping memory usage	3.07 GB
Blending time	8 minutes 36 seconds
Blending memory usage	5.94 GB
Software version	1.7.2.12040
File size	295.61 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	7 minutes 58 seconds
Memory usage	579.69 MB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	1 hours 15 minutes
Memory usage	3.54 GB
Software version	1.7.2.12040
File size	574.72 MB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.2 build 12040
OS	Windows 64 bit
RAM	127.78 GB
CPU	Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz
GPU(s)	GeForce RTX 2080