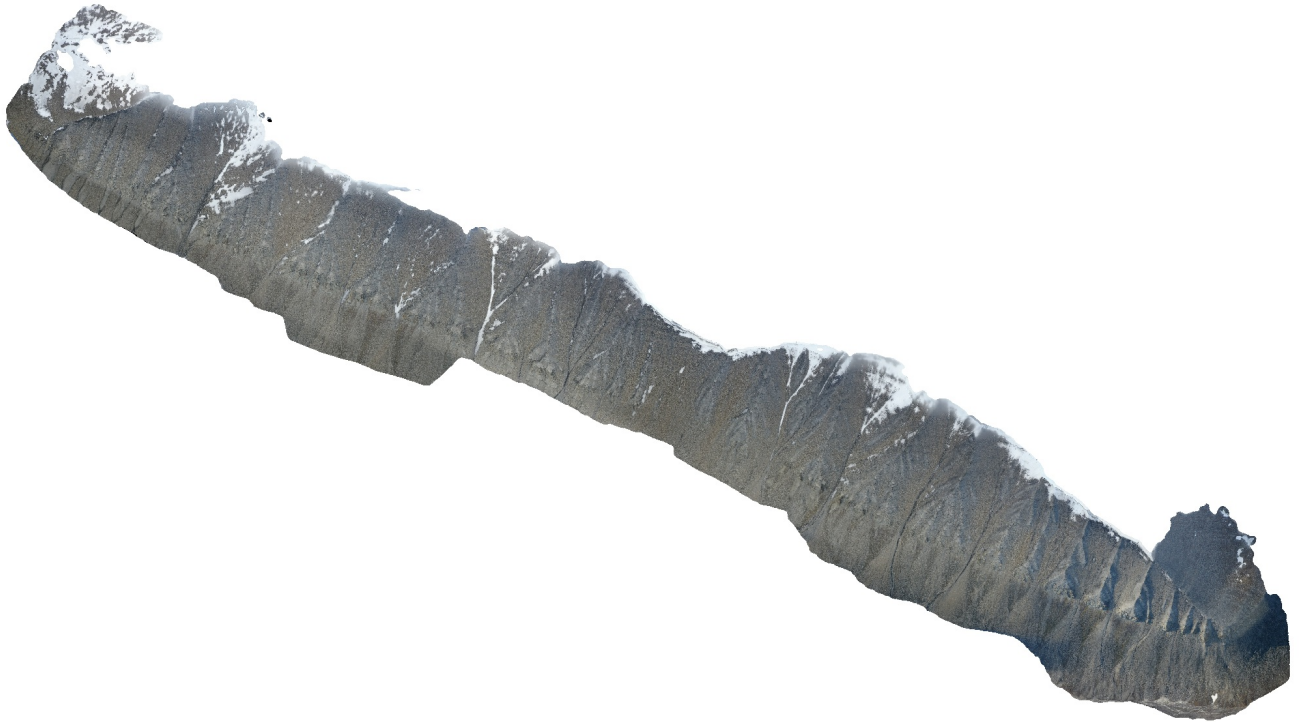


Brogniartfjella

Processing Report
28 January 2022



Survey Data

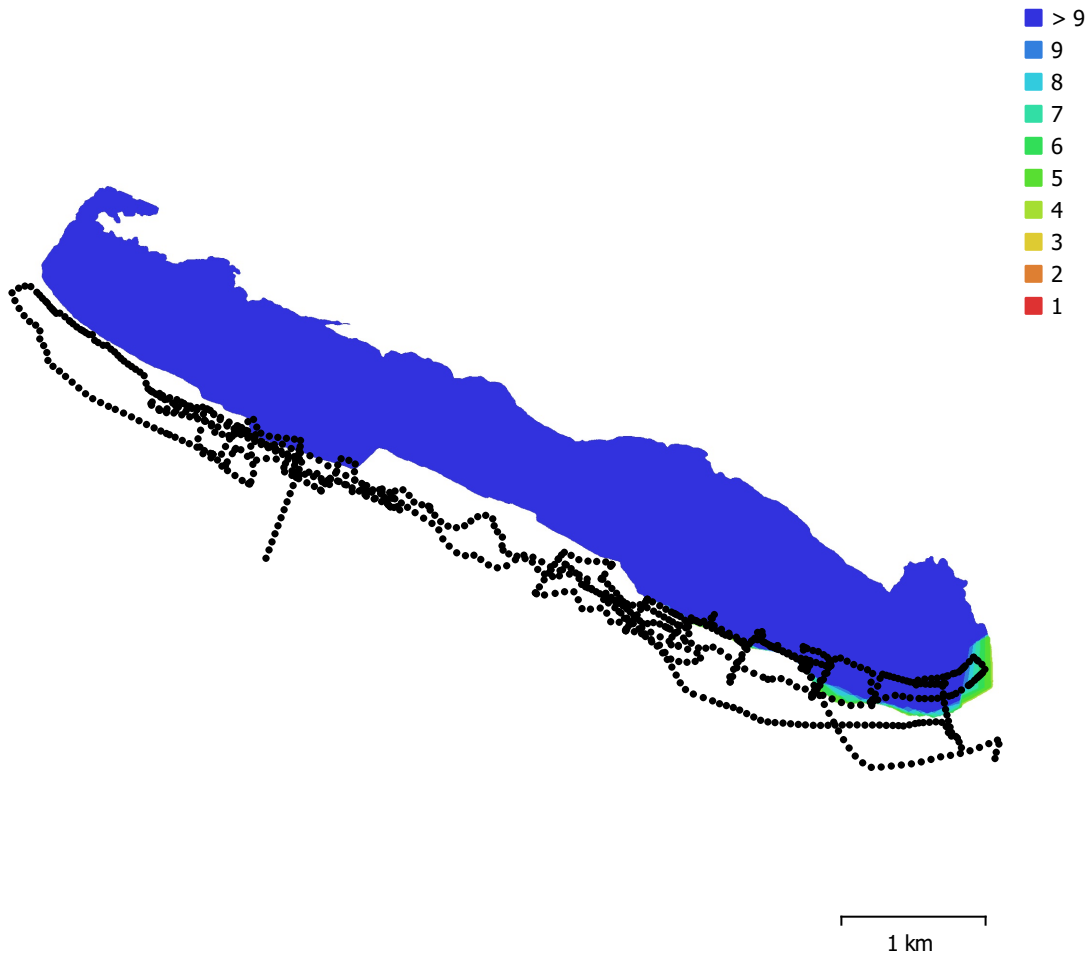


Fig. 1. Camera locations and image overlap.

Number of images:	859	Camera stations:	859
Flying altitude:	450 m	Tie points:	133,174
Ground resolution:	11.8 cm/pix	Projections:	1,436,827
Coverage area:	5.87 km ²	Reprojection error:	1.23 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

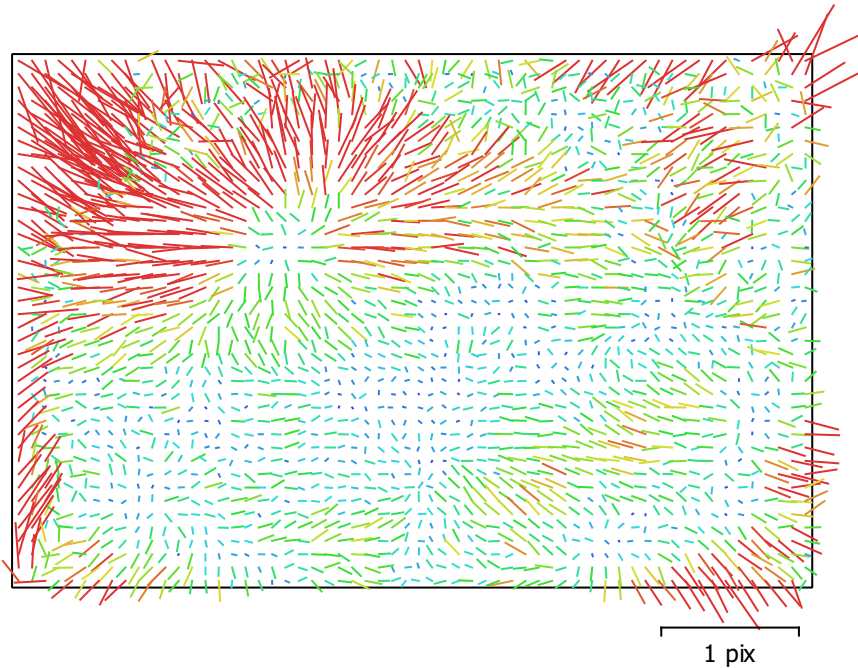


Fig. 2. Image residuals for L1D-20c (10.26mm).

L1D-20c (10.26mm)

859 images

Type	Resolution	Focal Length	Pixel Size
Frame	5472 x 3648	10.26 mm	2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	B1	B2	K1	K2	K3	K4	P1	P2
F	4355.08	0.19	1.00	0.08	0.13	-0.78	-0.14	-0.05	0.07	-0.06	0.05	-0.05	0.02
Cx	-33.3021	0.15		1.00	-0.09	-0.06	0.49	0.02	-0.03	0.03	-0.04	0.83	-0.02
Cy	-53.2226	0.25			1.00	-0.65	-0.18	-0.01	-0.01	0.01	-0.02	-0.09	0.49
B1	12.941	0.21				1.00	0.12	-0.00	0.00	-0.01	0.02	0.08	-0.20
B2	-20.826	0.14					1.00	0.01	-0.01	0.02	-0.02	0.14	-0.04
K1	0.01018	8.3e-05						1.00	-0.97	0.92	-0.86	0.02	-0.06
K2	0.000167858	0.00057							1.00	-0.99	0.95	-0.02	0.00
K3	0.0652555	0.0016								1.00	-0.99	0.02	0.01
K4	-0.0988025	0.0015									1.00	-0.03	-0.02
P1	-0.000511881	9e-06										1.00	-0.02
P2	-0.00316071	5.5e-06											1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

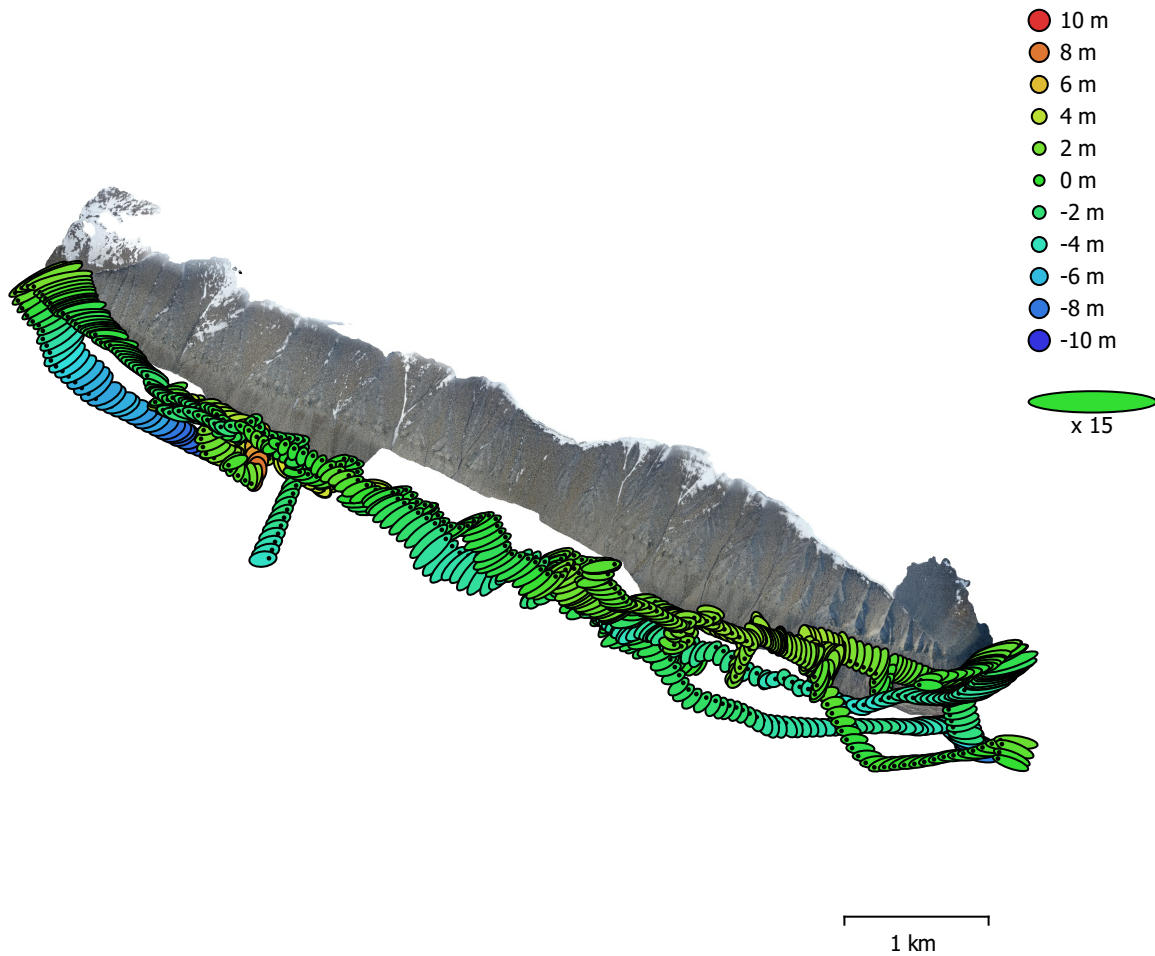


Fig. 3. Camera locations and error estimates.

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 (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
8.37032	4.49821	2.64962	9.50243	9.86492

Table 3. Average camera location error.

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

Digital Elevation Model

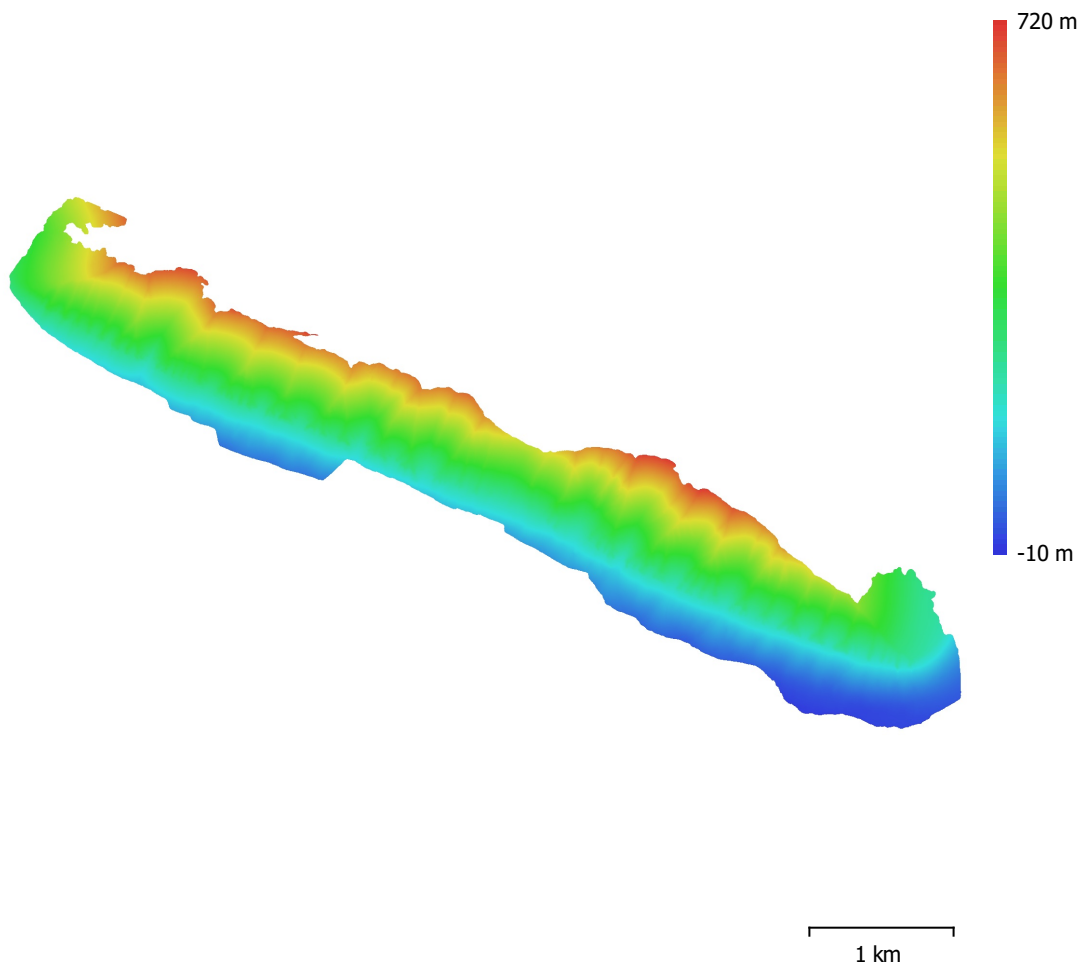


Fig. 4. Reconstructed digital elevation model.

Resolution: 47 cm/pix
Point density: 4.52 points/m²

Processing Parameters

General

Cameras	859
Aligned cameras	859
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	133,174 of 246,025
RMS reprojection error	0.741161 (1.22523 pix)
Max reprojection error	4.44734 (49.5546 pix)
Mean key point size	1.51392 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	22.138

Alignment parameters

Accuracy	Highest
Generic preselection	No
Reference preselection	No
Key point limit	40,000
Tie point limit	4,000
Exclude stationary tie points	No
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	8 hours 20 minutes
Matching memory usage	7.23 GB
Alignment time	19 minutes 7 seconds
Alignment memory usage	806.13 MB

Optimization parameters

Parameters	f, b1, b2, cx, cy, k1-k4, p1, p2
Adaptive camera model fitting	No
Optimization time	18 seconds
Software version	1.7.2.12040
File size	86.97 MB

Depth Maps

Count	858
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Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	47 minutes 30 seconds
Memory usage	2.02 GB
Software version	1.7.2.12040
File size	1.61 GB

Dense Point Cloud

Points	37,935,084
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	47 minutes 30 seconds
Memory usage	2.02 GB

Dense cloud generation parameters

Processing time	2 hours 17 minutes
Memory usage	8.40 GB
Software version	1.7.2.12040
File size	768.95 MB
Model	
Faces	2,528,861
Vertices	1,270,295
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	47 minutes 30 seconds
Memory usage	2.02 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	12 minutes 45 seconds
Memory usage	18.50 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 59 seconds
UV mapping memory usage	3.83 GB
Blending time	52 minutes 59 seconds
Blending memory usage	5.52 GB
Software version	1.7.2.12040
File size	388.87 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	47 minutes 30 seconds
Memory usage	2.02 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	2 hours 47 minutes
Memory usage	3.52 GB
Software version	1.7.2.12040
File size	801.77 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