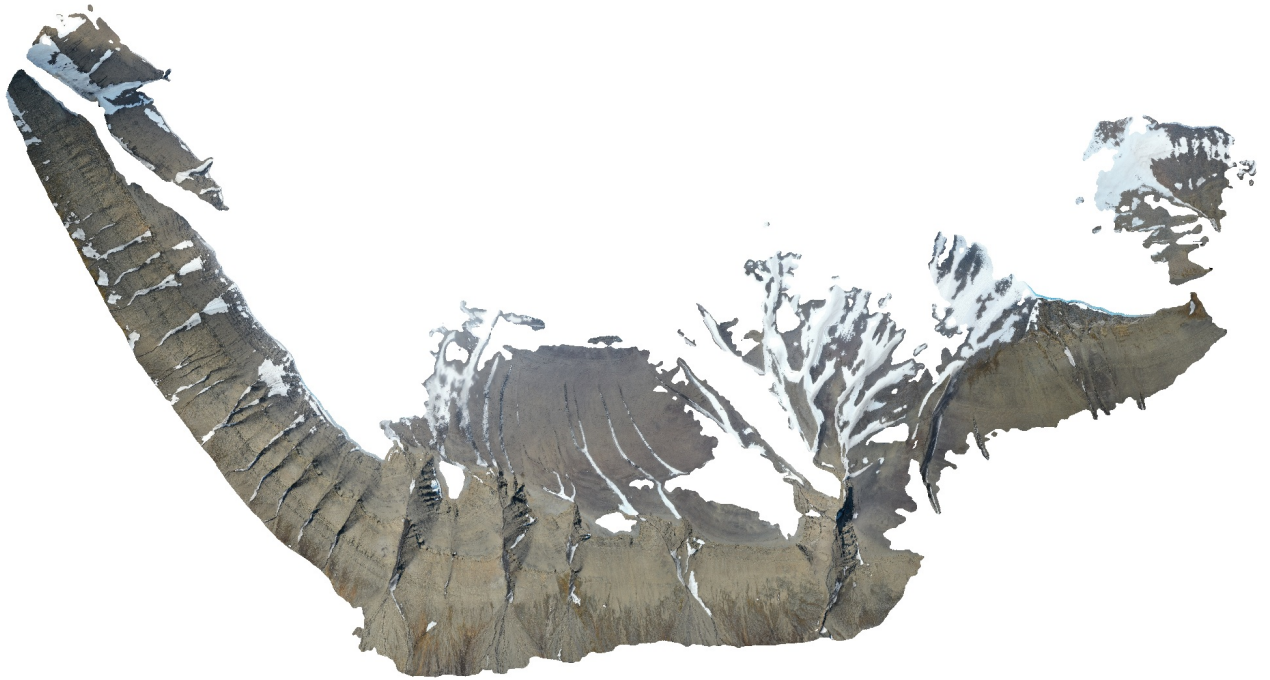


Kolfjellet

Processing Report
28 January 2022



Survey Data

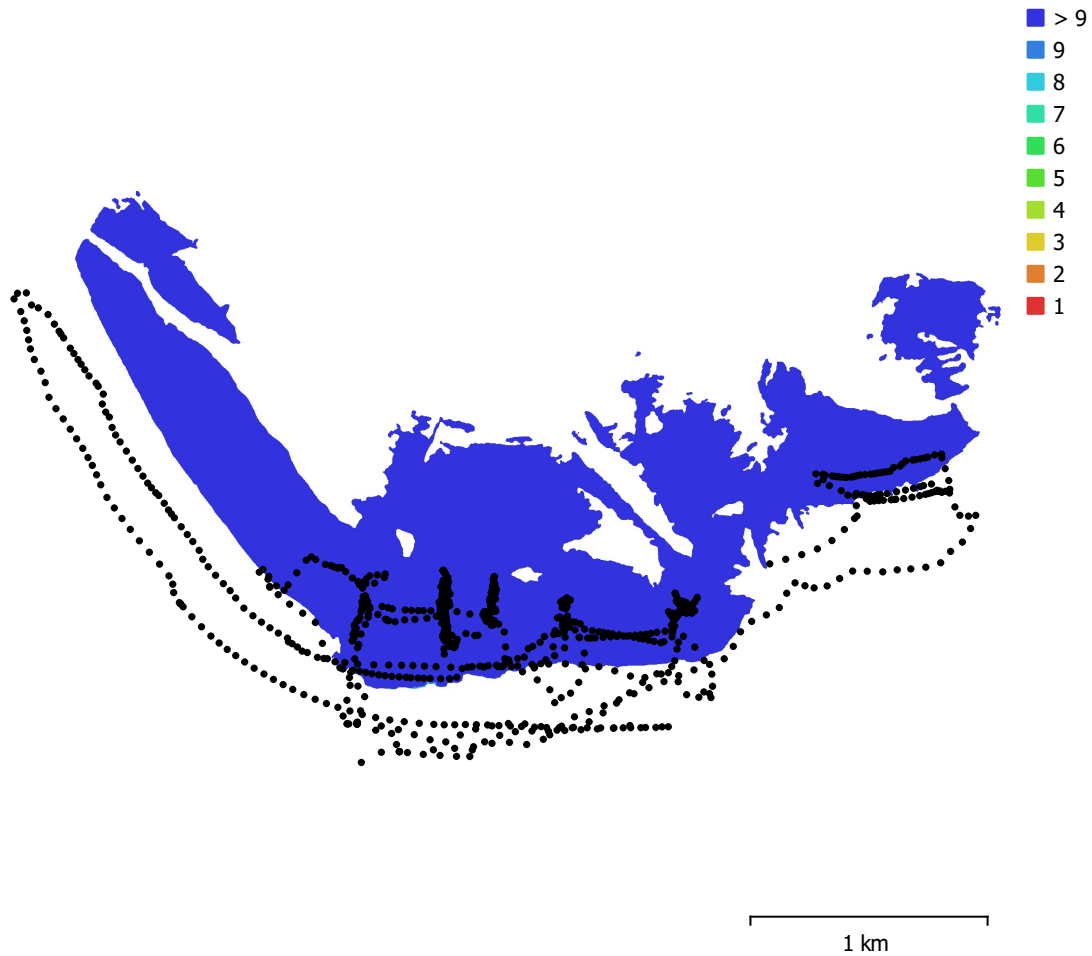


Fig. 1. Camera locations and image overlap.

Number of images:	885	Camera stations:	885
Flying altitude:	268 m	Tie points:	323,095
Ground resolution:	6.4 cm/pix	Projections:	2,764,723
Coverage area:	2.74 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

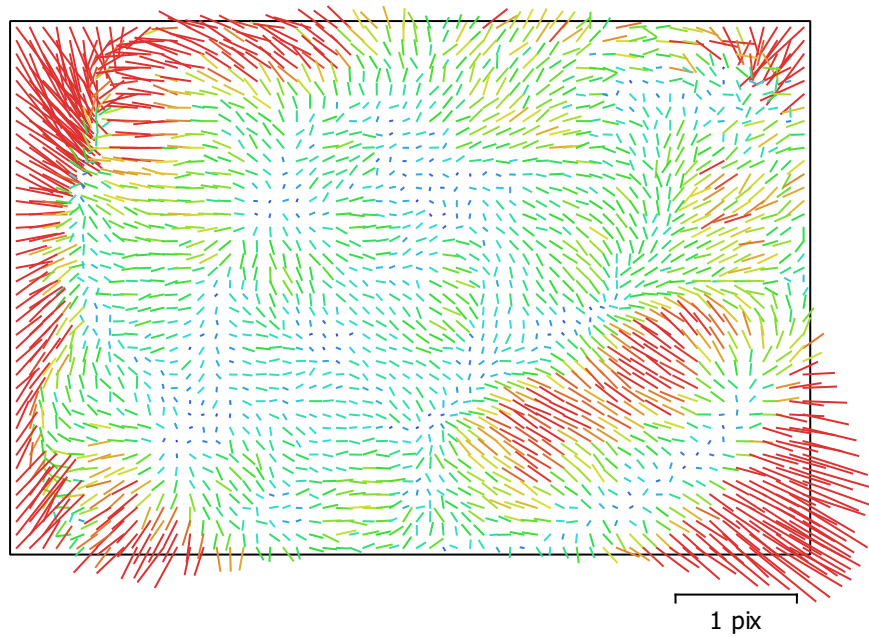


Fig. 2. Image residuals for L1D-20c (10.26mm).

L1D-20c (10.26mm)

885 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	4380.2	0.048	1.00	-0.01	0.33	-0.77	-0.10	-0.19	0.18	-0.16	0.15	0.00	0.03
Cx	6.6184	0.055		1.00	-0.06	0.02	0.22	0.00	-0.00	0.00	-0.00	0.89	-0.00
Cy	-41.0931	0.065			1.00	-0.67	-0.18	-0.03	0.00	0.00	-0.00	0.01	0.63
B1	1.033	0.054				1.00	0.14	0.02	-0.00	0.00	-0.00	-0.02	-0.15
B2	6.07125	0.037					1.00	0.01	-0.00	0.00	-0.00	-0.06	-0.05
K1	0.0100323	5.4e-05						1.00	-0.97	0.92	-0.87	0.00	-0.03
K2	0.0250525	0.0004							1.00	-0.99	0.96	-0.00	0.00
K3	0.0224778	0.0012								1.00	-0.99	0.00	0.01
K4	-0.0798046	0.0011									1.00	-0.00	-0.01
P1	0.000281456	4e-06										1.00	0.02
P2	-0.0030611	2.5e-06											1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

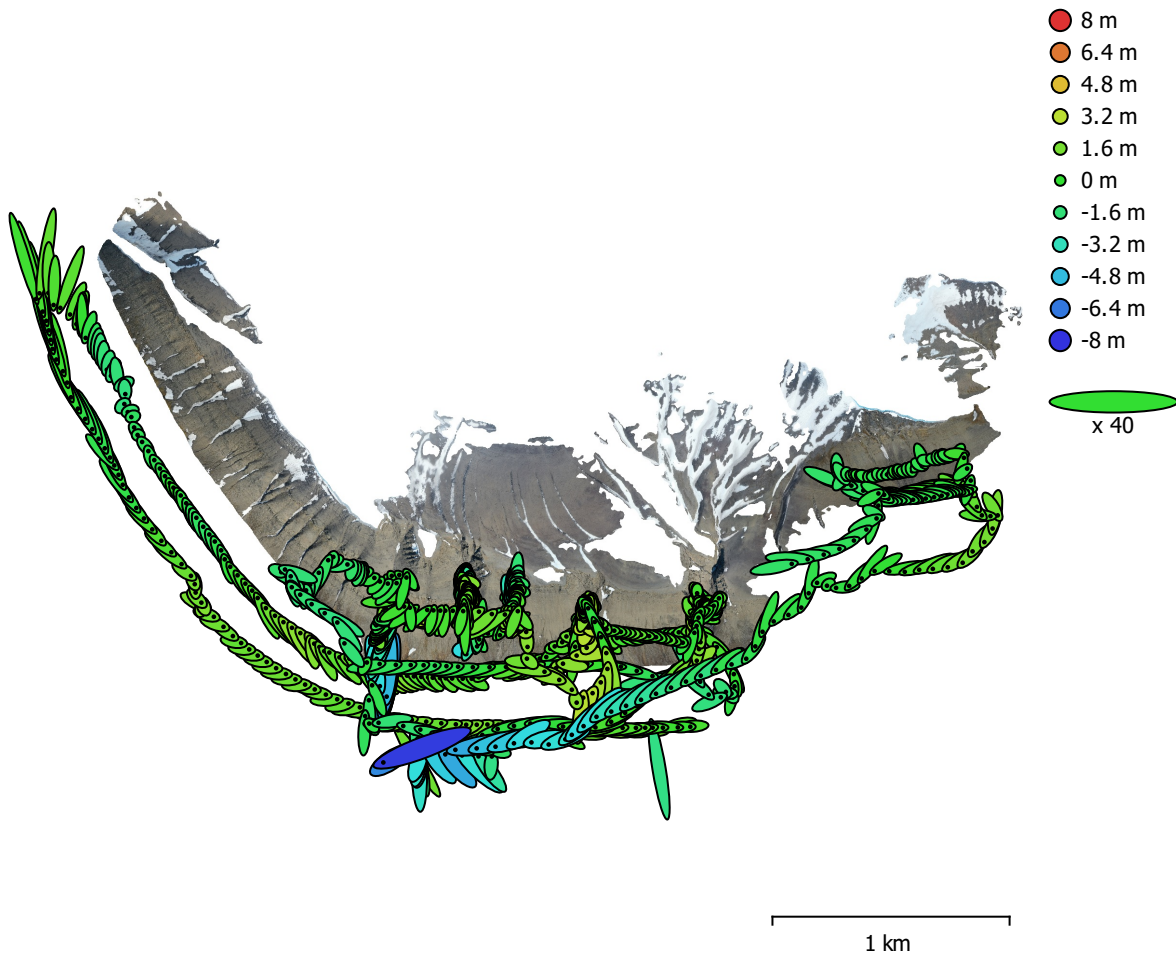


Fig. 3. Camera locations and error estimates.

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)
1.61791	1.82118	1.5	2.43604	2.86082

Table 3. Average camera location error.
X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

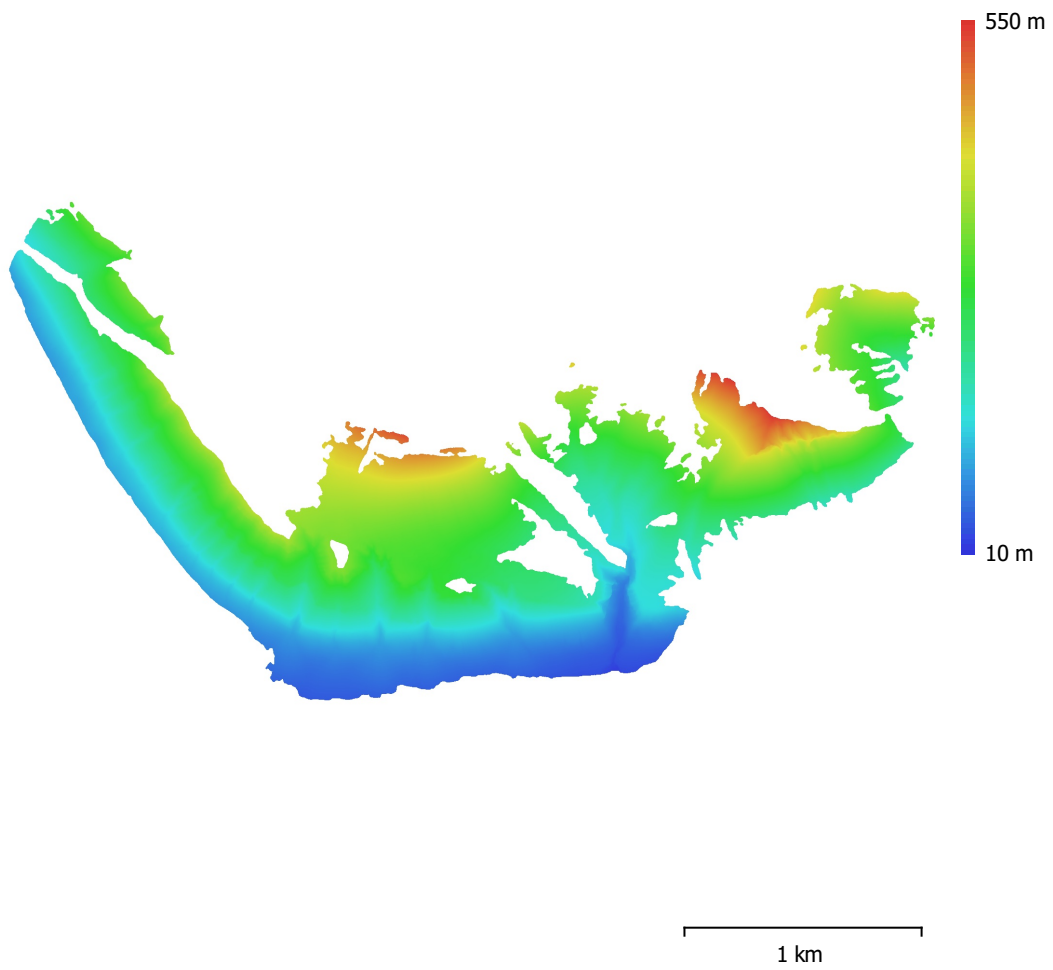


Fig. 4. Reconstructed digital elevation model.

Resolution: 25.6 cm/pix
Point density: 15.3 points/m²

Processing Parameters

General

Cameras	885
Aligned cameras	885
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	323,095 of 453,161
RMS reprojection error	0.631786 (1.22825 pix)
Max reprojection error	4.68629 (68.7573 pix)
Mean key point size	1.71475 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	10.3097

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	9 hours 56 minutes
Matching memory usage	3.17 GB
Alignment time	15 minutes 11 seconds
Alignment memory usage	922.71 MB

Optimization parameters

Parameters	f, b1, b2, cx, cy, k1-k4, p1, p2
Adaptive camera model fitting	No
Optimization time	35 seconds
Software version	1.7.2.12040
File size	80.10 MB

Depth Maps

Count	885
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Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	43 minutes 37 seconds
Memory usage	1.93 GB
Software version	1.7.2.12040
File size	1.68 GB

Dense Point Cloud

Points	39,486,088
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	43 minutes 37 seconds
Memory usage	1.93 GB

Dense cloud generation parameters

Processing time	2 hours 1 minutes
Memory usage	8.71 GB
Software version	1.7.2.12040
File size	1.27 GB
Model	
Faces	7,897,216
Vertices	3,965,367
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	43 minutes 37 seconds
Memory usage	1.93 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	15 minutes 54 seconds
Memory usage	21.86 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	4 minutes 13 seconds
UV mapping memory usage	3.76 GB
Blending time	11 minutes 52 seconds
Blending memory usage	6.68 GB
Software version	1.7.2.12040
File size	597.04 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	43 minutes 37 seconds
Memory usage	1.93 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	High
Enable ghosting filter	No
Processing time	4 hours 38 minutes
Memory usage	6.74 GB
Software version	1.7.2.12040
File size	2.92 GB
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) i9-10900 CPU @ 2.80GHz
GPU(s)	NVIDIA GeForce RTX 2080 SUPER