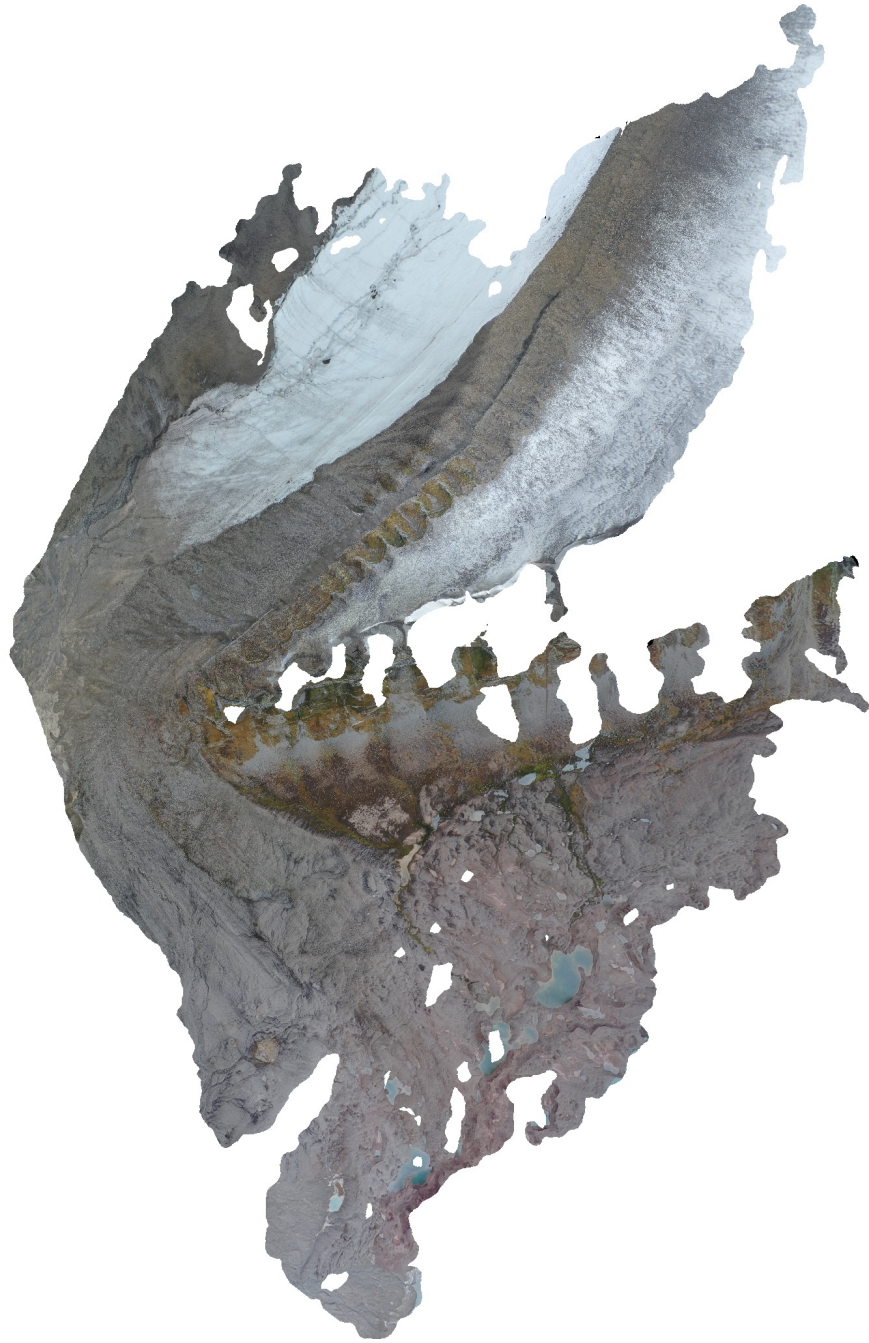


Ultunafjella

Processing Report
27 January 2022



Survey Data

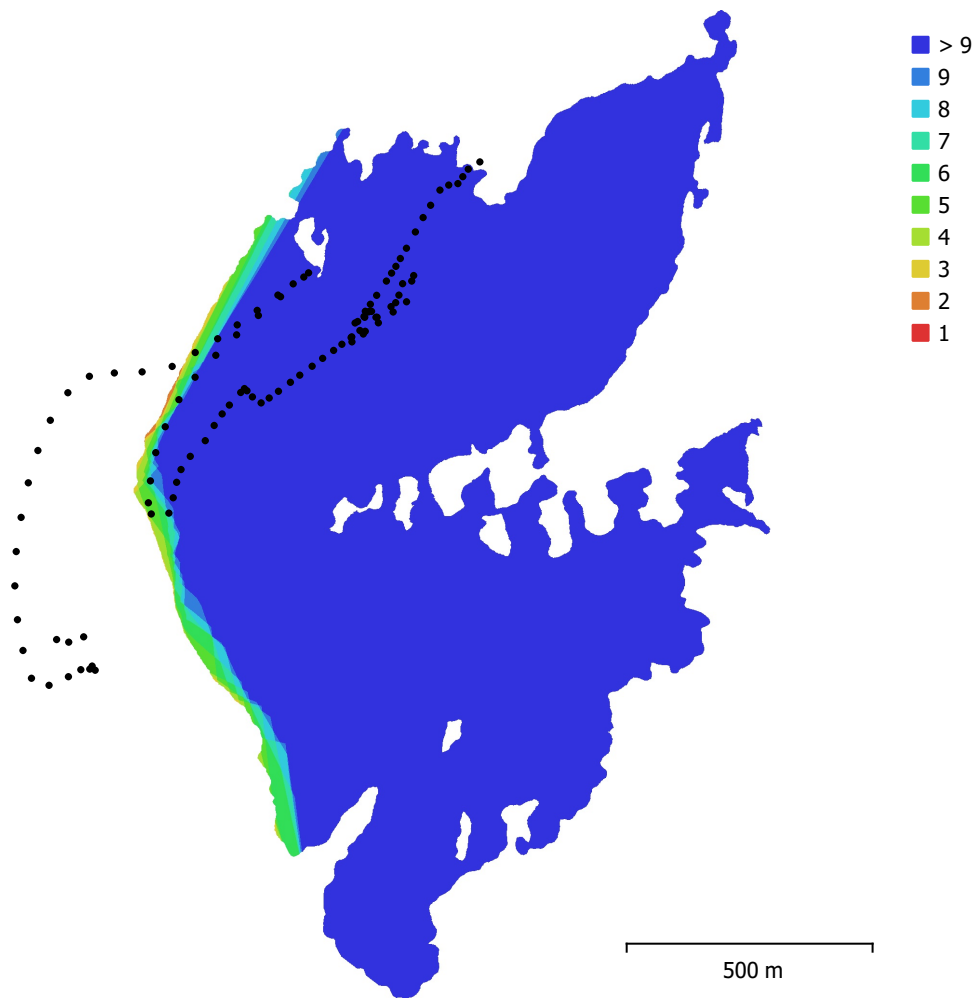


Fig. 1. Camera locations and image overlap.

Number of images:	105	Camera stations:	105
Flying altitude:	359 m	Tie points:	33,243
Ground resolution:	7.86 cm/pix	Projections:	344,902
Coverage area:	1.3 km ²	Reprojection error:	0.726 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

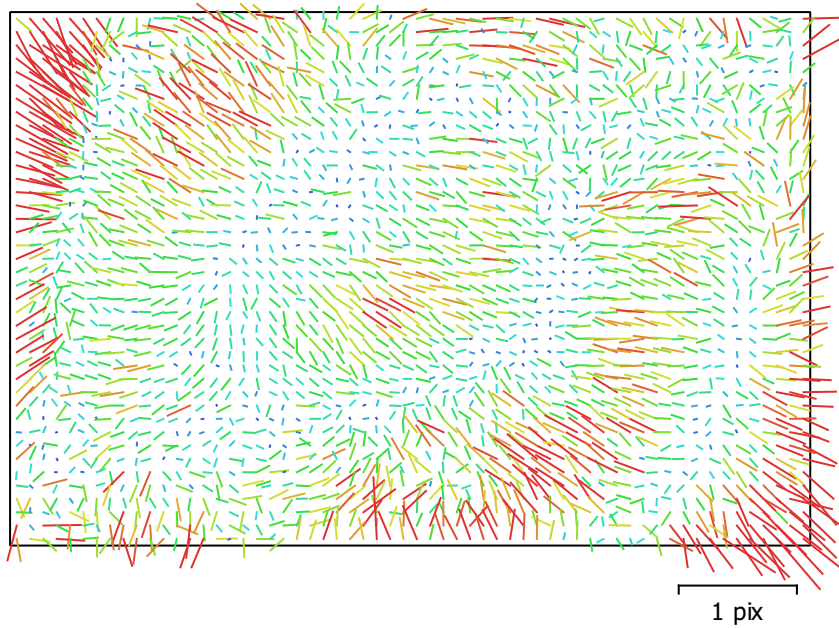


Fig. 2. Image residuals for L1D-20c (10.26mm).

L1D-20c (10.26mm)

105 images

Type **Frame** Resolution **5472 x 3648** Focal Length **10.26 mm** Pixel Size **2.41 x 2.41 μ m**

	Value	Error	F	Cx	Cy	B1	B2	K1	K2	K3	P1	P2
F	4306.79	0.23	1.00	0.03	0.60	-0.94	0.04	-0.04	0.06	-0.06	0.11	-0.01
Cx	4.50247	0.13		1.00	0.08	-0.05	0.13	-0.00	0.00	-0.00	0.86	0.10
Cy	-79.3245	0.24			1.00	-0.78	0.00	-0.03	0.01	-0.01	0.19	0.61
B1	48.2105	0.25				1.00	-0.01	0.01	-0.01	0.01	-0.17	-0.14
B2	-10.1788	0.11					1.00	0.00	0.02	-0.03	-0.26	-0.12
K1	0.0061984	5.5e-05						1.00	-0.95	0.89	-0.01	-0.10
K2	0.0300821	0.00022							1.00	-0.98	-0.01	0.02
K3	-0.0306484	0.00028								1.00	0.01	-0.02
P1	-0.000181015	1e-05									1.00	0.18
P2	-0.00372679	7.6e-06										1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

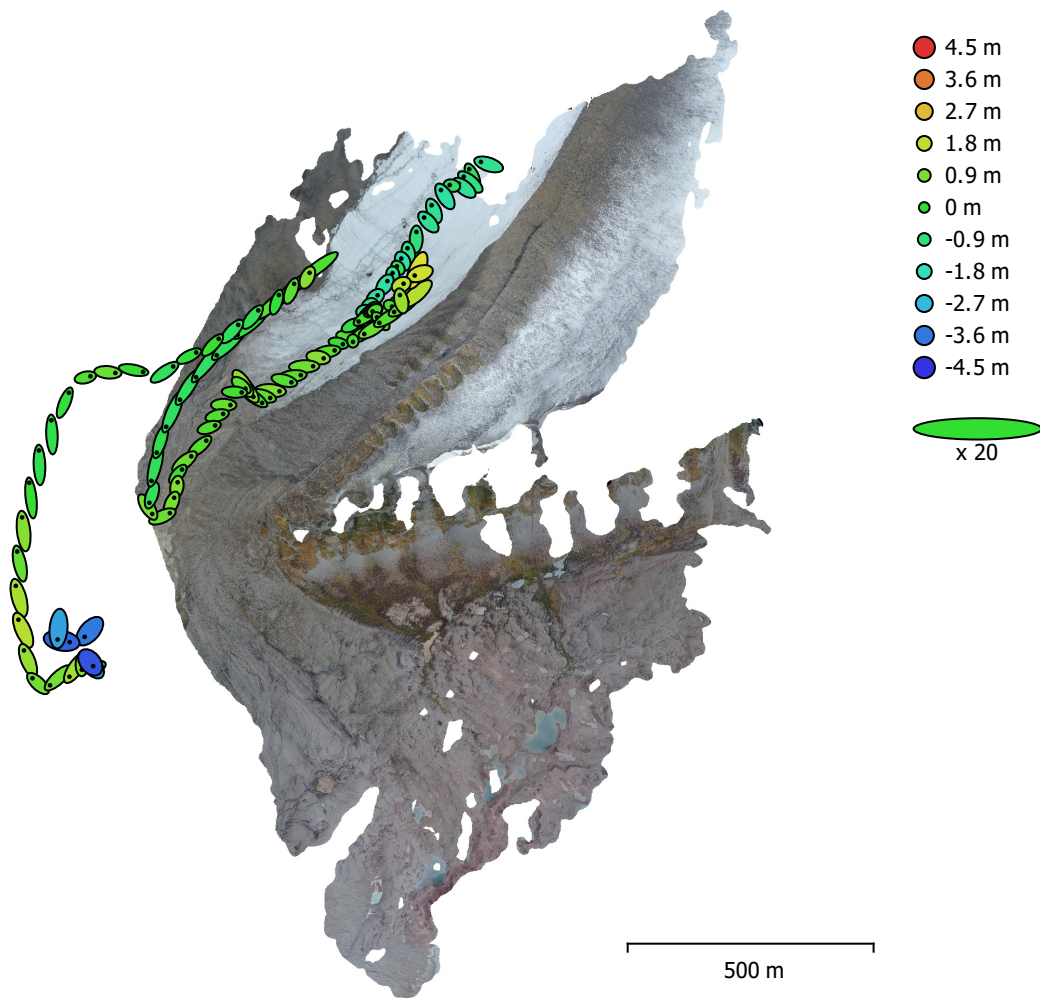


Fig. 3. Camera locations and error estimates.

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)
1.23056	1.39856	1.14872	1.86287	2.18857

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

Digital Elevation Model

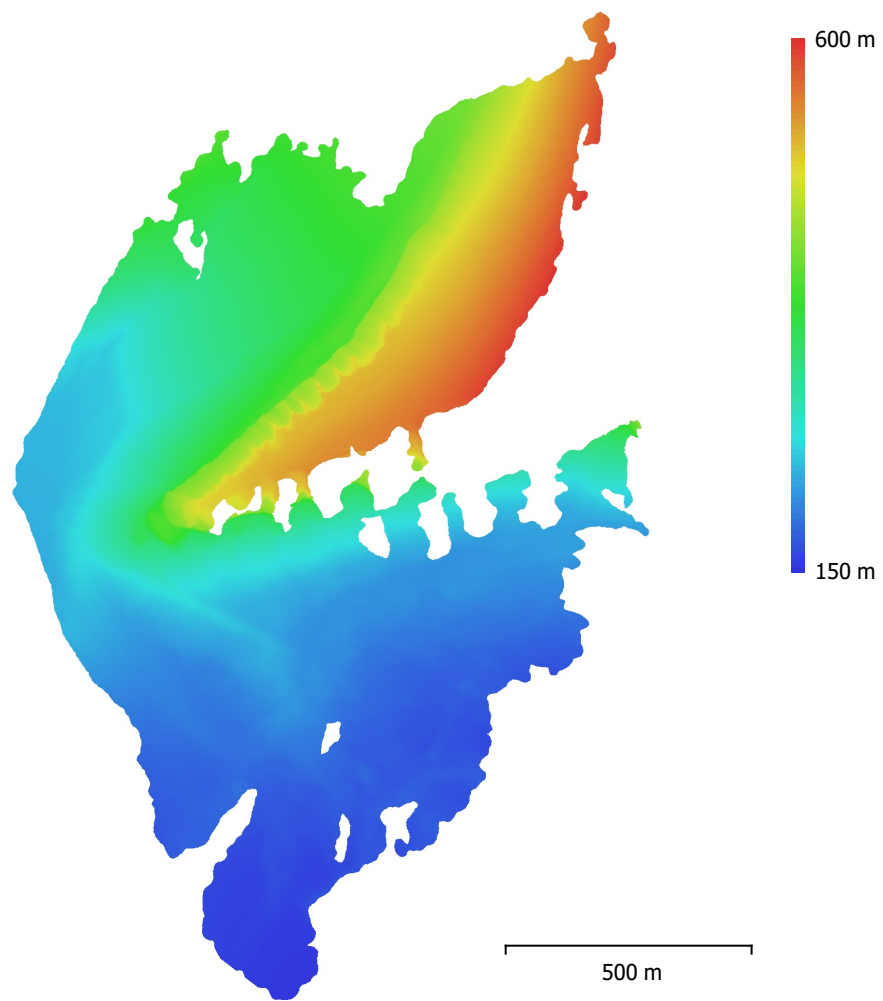


Fig. 4. Reconstructed digital elevation model.

Resolution: 31.4 cm/pix
Point density: 10.1 points/m²

Processing Parameters

General

Cameras	105
Aligned cameras	105
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	33,243 of 45,443
RMS reprojection error	0.477065 (0.726353 pix)
Max reprojection error	1.85815 (17.1538 pix)
Mean key point size	1.46555 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	12.2381

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	32 minutes 33 seconds
Matching memory usage	498.66 MB
Alignment time	1 minutes 2 seconds
Alignment memory usage	79.56 MB

Optimization parameters

Parameters	f, b1, b2, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	2 seconds
Software version	1.7.2.12040
File size	9.39 MB

Depth Maps

Count	105
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Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 23 seconds
Memory usage	995.55 MB
Software version	1.7.2.12040
File size	193.12 MB

Dense Point Cloud

Points	8,210,168
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 23 seconds
Memory usage	995.55 MB

Dense cloud generation parameters

Processing time	12 minutes 39 seconds
Memory usage	3.57 GB
Software version	1.7.2.12040
File size	242.79 MB
Model	
Faces	540,634
Vertices	275,633
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	5 minutes 23 seconds
Memory usage	995.55 MB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	3 minutes 22 seconds
Memory usage	4.41 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	2 minutes 38 seconds
UV mapping memory usage	3.93 GB
Blending time	6 minutes 37 seconds
Blending memory usage	6.91 GB
Software version	1.7.2.12040
File size	171.96 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 23 seconds
Memory usage	995.55 MB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	39 minutes 57 seconds
Memory usage	3.67 GB
Software version	1.7.2.12040
File size	304.70 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