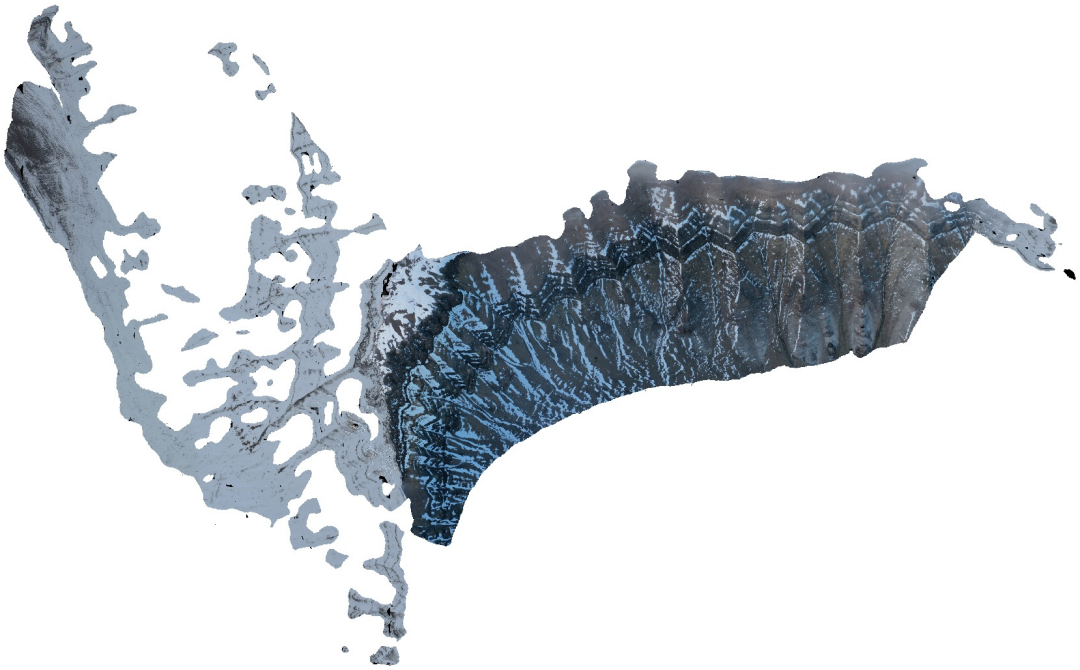
Meyerfjellet

Filtering:
Dense cloud: 4-255
Connected mesh: 99%

19 February 2022



Survey Data

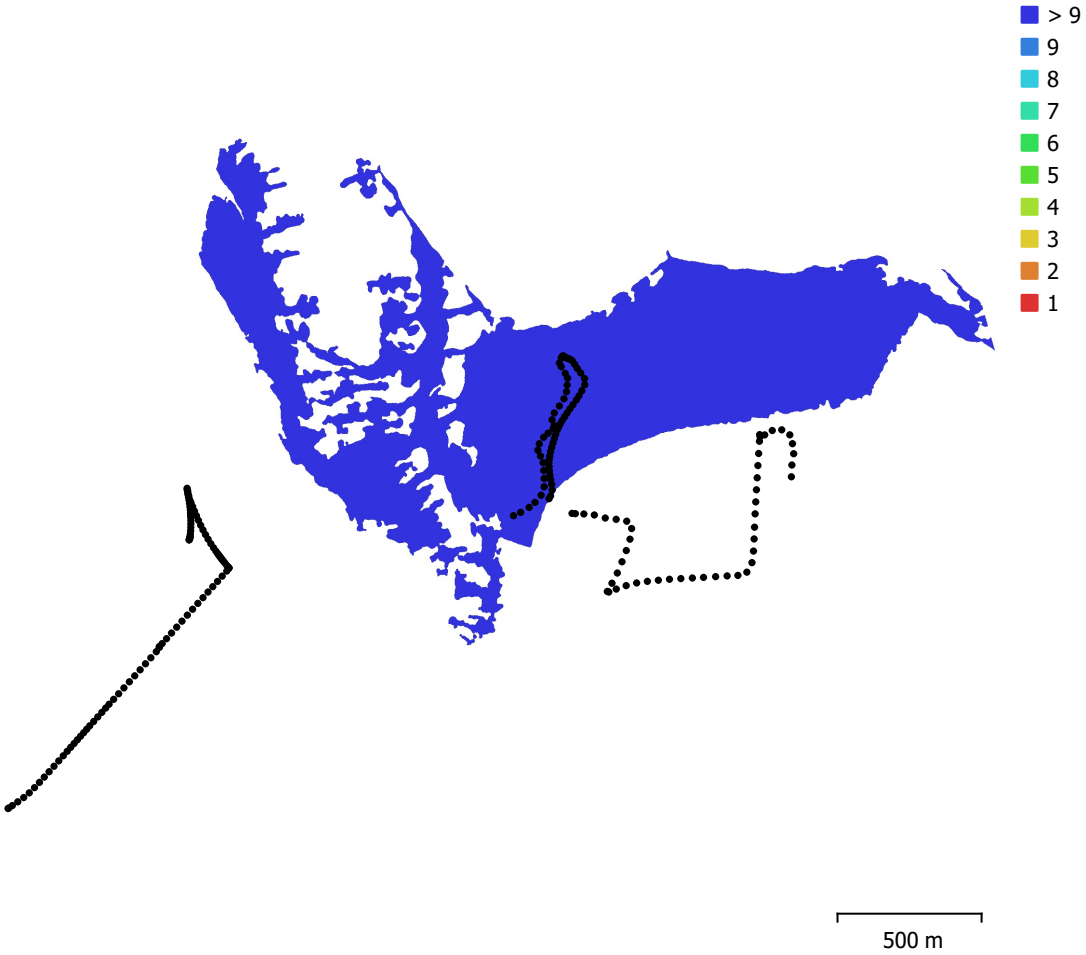


Fig. 1. Camera locations and image overlap.

Number of images:	222	Camera stations:	222
Flying altitude:	793 m	Tie points:	91,703
Ground resolution:	11 cm/pix	Projections:	646,023
Coverage area:	1.4 km²	Reprojection error:	0.48 pix

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

Table 1. Cameras.

Camera Calibration

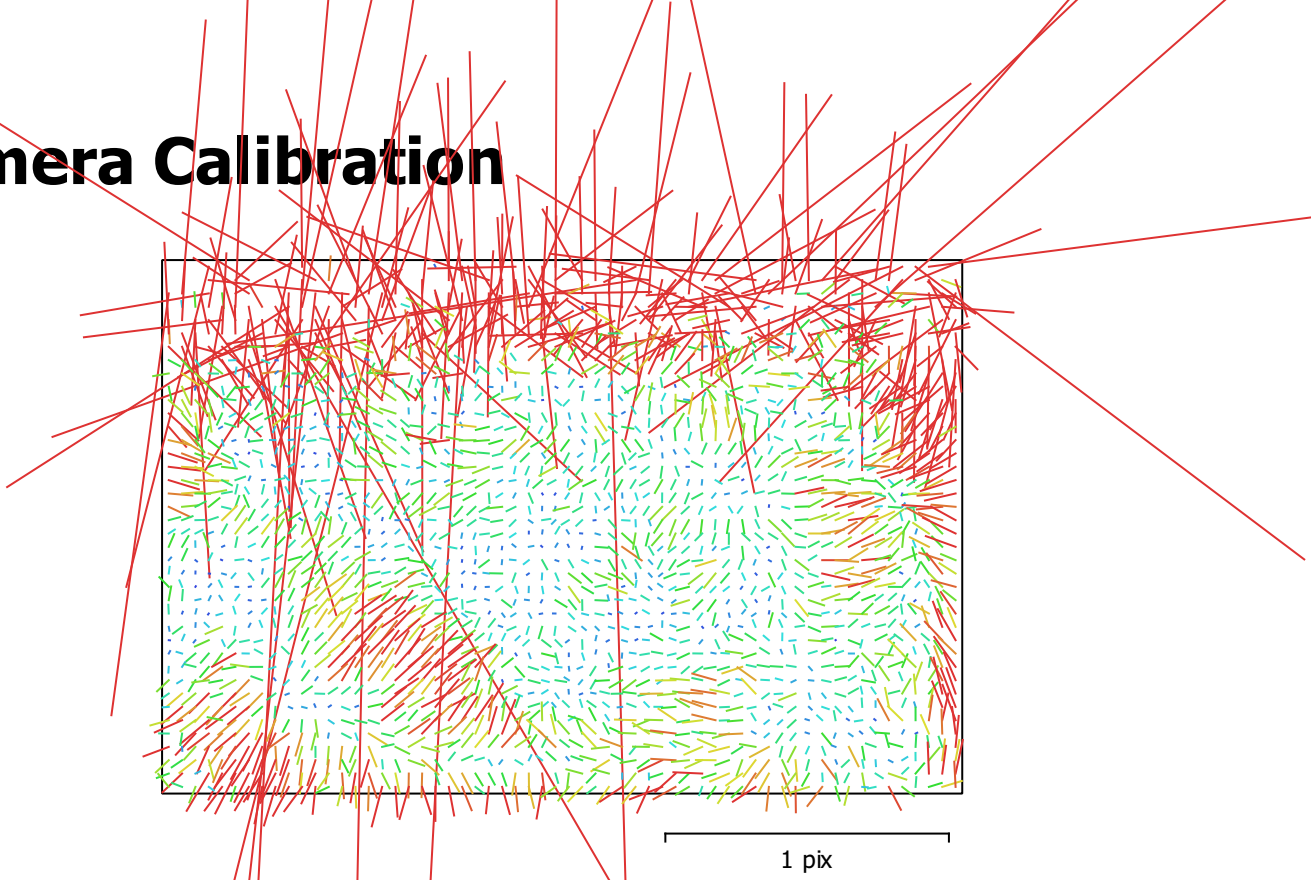


Fig. 2. Image residuals for L1D-20c (10.26mm).

L1D-20c (10.26mm)

222 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	P1	P2
F	**4309.26**	0.18	1.00	0.02	0.63	-0.95	-0.28	0.01	0.06	-0.07	0.10	-0.00
Cx	**25.322**	0.11		1.00	-0.07	0.01	0.25	0.03	-0.02	0.04	0.90	-0.08
Cy	**-63.0586**	0.14			1.00	-0.75	-0.22	-0.12	0.08	-0.08	-0.01	0.65
B1	**25.1079**	0.19				1.00	0.25	0.07	-0.05	0.06	-0.05	-0.11
B2	**18.7051**	0.11					1.00	0.00	-0.02	0.03	-0.15	-0.06
K1	**1.08572e-05**	2.8e-05						1.00	-0.91	0.83	0.05	-0.20
K2	**0.0171566**	0.00011							1.00	-0.98	-0.01	0.10
K3	**-0.0252956**	0.00013								1.00	0.02	-0.09
P1	**0.00138907**	7.6e-06									1.00	-0.08
P2	**-0.00281732**	4.9e-06										1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

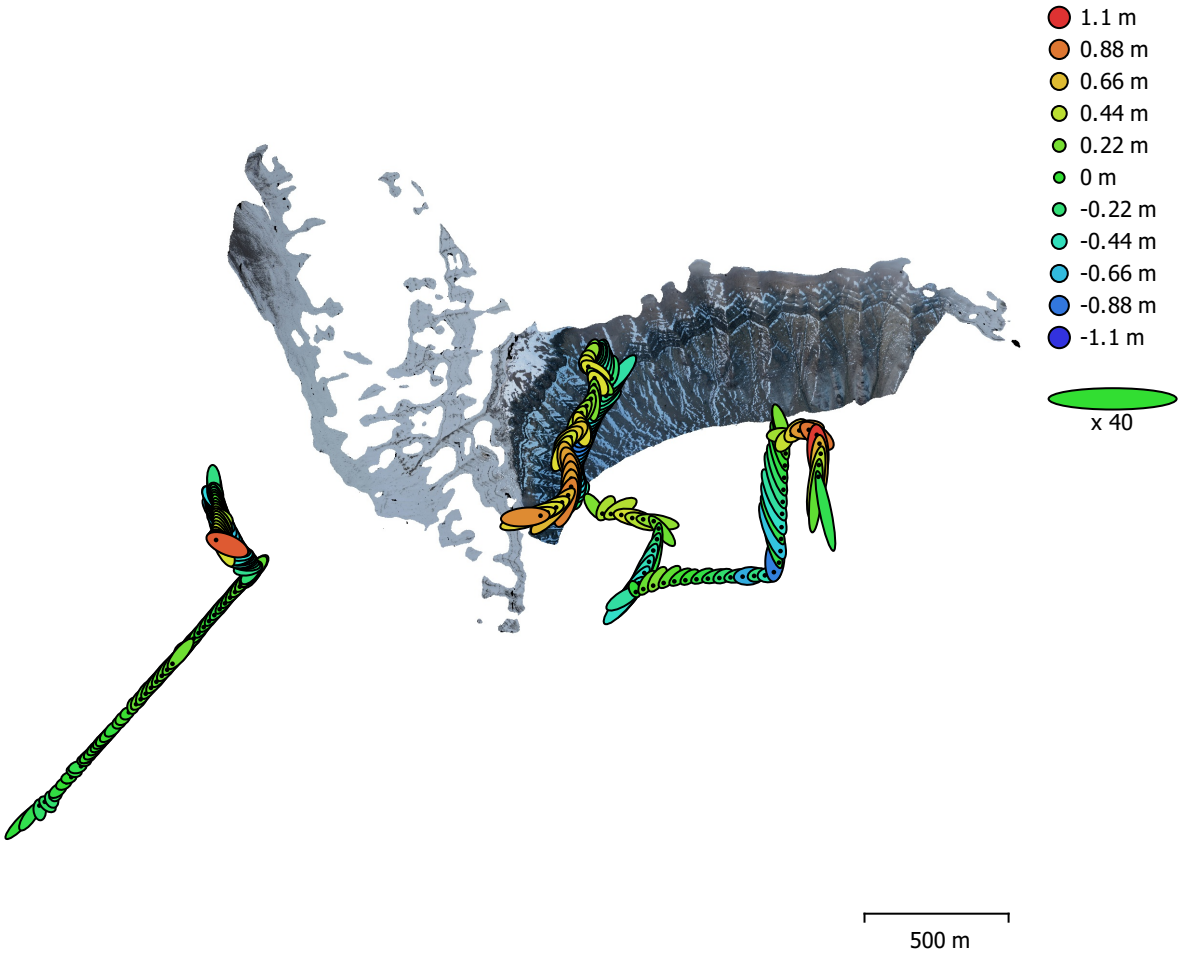


Fig. 3. Camera locations and error estimates.
Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.
Estimated camera locations are marked with a black dot.

X error (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
1.07296	1.631	0.424633	1.95229	1.99793

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

Digital Elevation Model

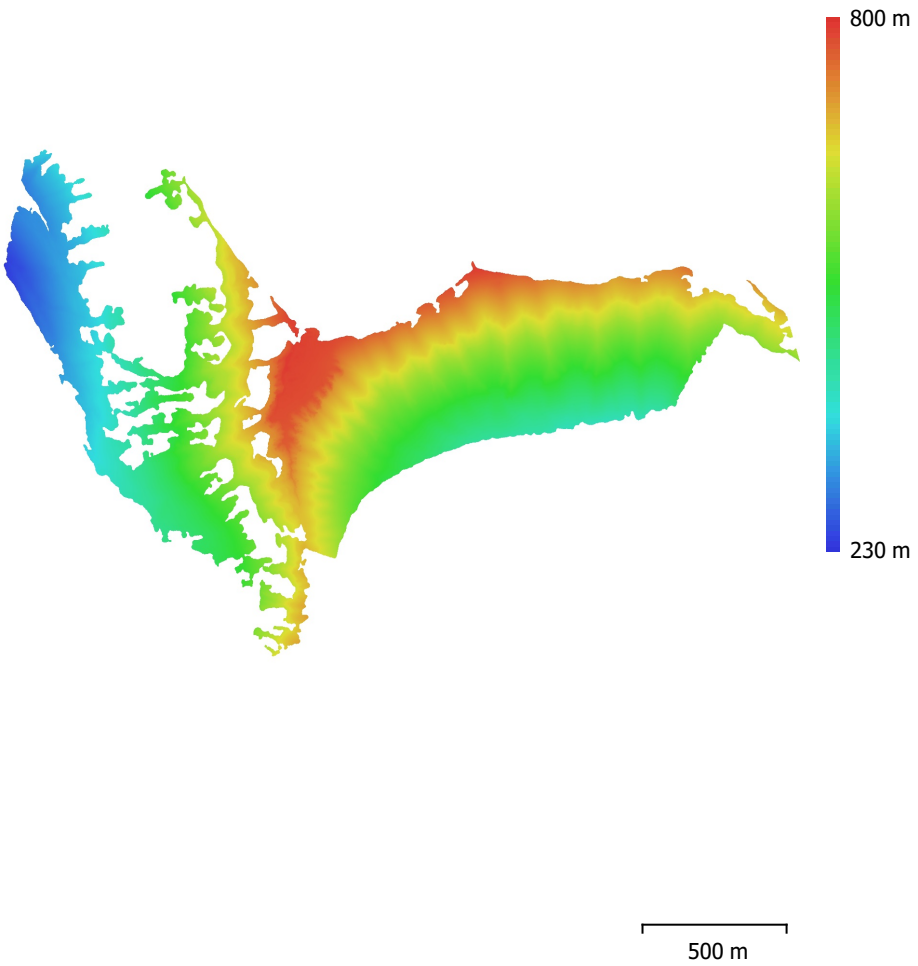


Fig. 4. Reconstructed digital elevation model.

Resolution:	22 cm/pix
Point density:	20.7 points/m²

Processing Parameters

General	
Cameras	222
Aligned cameras	222
Shapes	
LineString	10
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll
Point Cloud	
Points	91,703 of 122,387
RMS reprojection error	0.214784 (0.479626 pix)
Max reprojection error	1.05213 (24.3428 pix)
Mean key point size	2.02797 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	7.58288
Alignment parameters	
Accuracy	Highest
Generic preselection	Yes
Reference preselection	Source
Key point limit	40,000
Tie point limit	4,000
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	2 minutes 11 seconds
Matching memory usage	299.00 MB
Alignment time	2 minutes 23 seconds
Alignment memory usage	204.94 MB
Optimization parameters	
Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	Yes
Optimization time	5 seconds
Software version	1.7.1.11797
File size	16.64 MB
Depth Maps	
Count	222
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	100
Processing time	16 minutes 27 seconds
Memory usage	8.10 GB
Software version	1.7.1.11797
File size	858.48 MB
Dense Point Cloud	
Points	25,993,122
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild

Max neighbors	100
Processing time	16 minutes 27 seconds
Memory usage	8.10 GB
Dense cloud generation parameters	
Processing time	30 minutes 57 seconds
Memory usage	10.33 GB
Software version	1.7.1.11797
File size	792.14 MB
Model	
Faces	5,030,456
Vertices	2,534,346
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096 x 10, 4 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	100
Processing time	16 minutes 27 seconds
Memory usage	8.10 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	10 minutes 17 seconds
Memory usage	14.74 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 39 seconds
UV mapping memory usage	3.96 GB
Blending time	1 minutes 53 seconds
Blending memory usage	5.67 GB
Software version	1.7.1.11797
File size	411.72 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	100
Processing time	16 minutes 27 seconds
Memory usage	8.10 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	128
Face count	Low
Enable ghosting filter	No
Processing time	13 hours 12 minutes
Memory usage	15.32 GB
Software version	1.7.1.11797
File size	11.50 GB
System	

Software name	Agisoft Metashape Professional
Software version	1.7.2 build 12040
OS	Windows 64 bit
RAM	127.71 GB
CPU	Intel(R) Xeon(R) Gold 5122 CPU @ 3.60GHz
GPU(s)	Quadro P5000