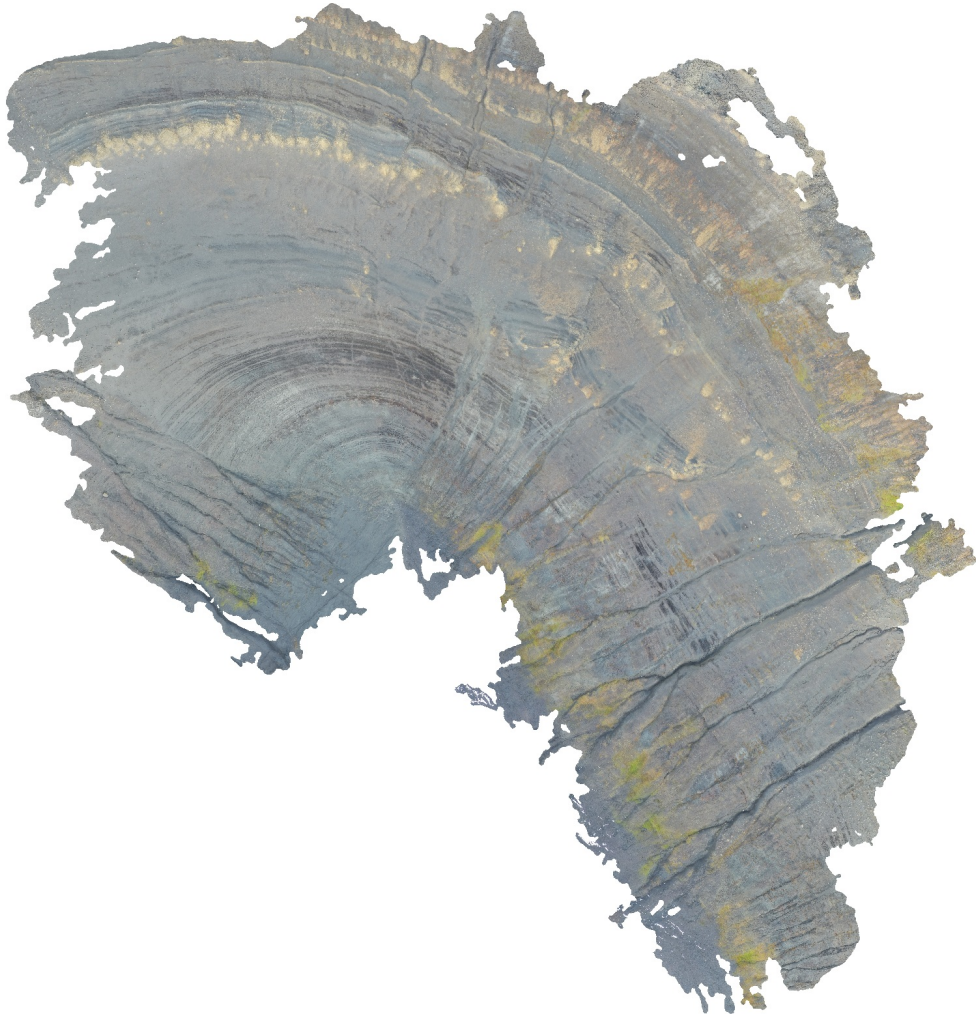


Processing Report

Filtering:

--Reconstruction_uncertainty: 12
--Projection_accuracy: 3
--Reprojection_error: 0.3
--Dense_cloud_confidence: 10-255
--mesh_connected_component_size: 99%

14 April 2022



Survey Data

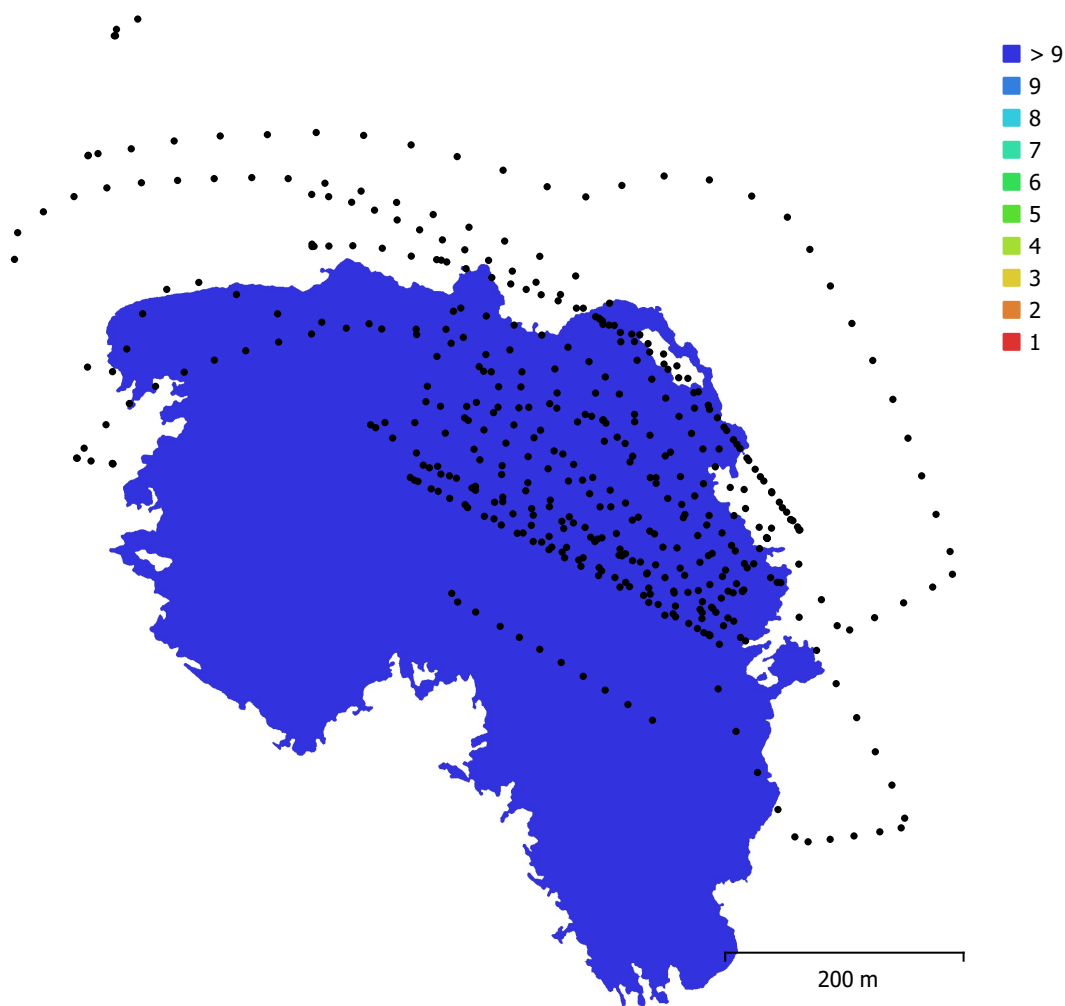


Fig. 1. Camera locations and image overlap.

Number of images:	442	Camera stations:	442
Flying altitude:	125 m	Tie points:	494,629
Ground resolution:	2.97 cm/pix	Projections:	1,147,304
Coverage area:	0.214 km ²	Reprojection error:	0.208 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

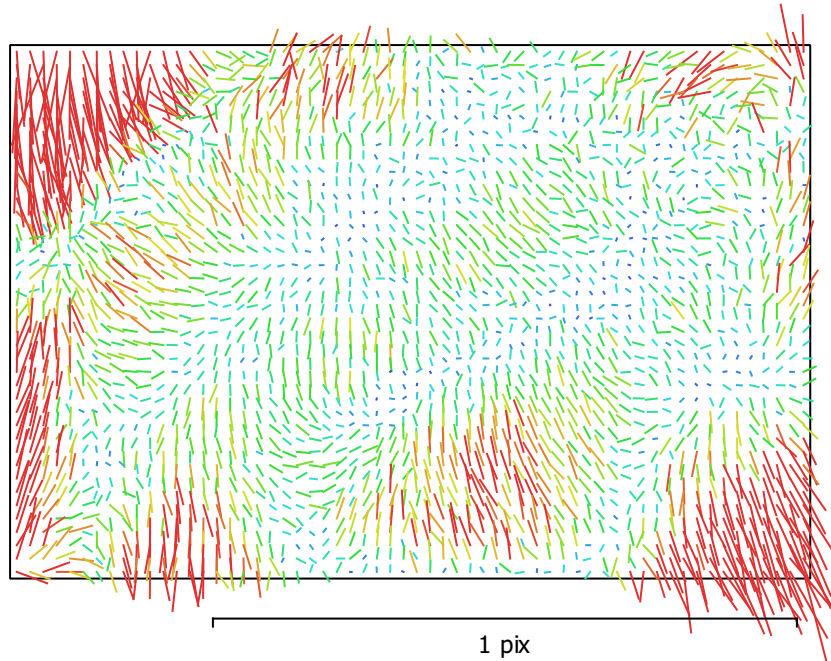


Fig. 2. Image residuals for L1D-20c (10.26mm).

L1D-20c (10.26mm)

442 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	K1	K2	K3	P1	P2
F	4349.92	0.058	1.00	0.03	-0.73	0.02	0.06	-0.06	0.03	-0.26
Cx	4.23711	0.054		1.00	0.02	-0.00	0.01	-0.01	0.88	0.12
Cy	-63.4744	0.086			1.00	-0.09	0.03	-0.02	0.02	0.52
K1	0.0056793	2.3e-05				1.00	-0.94	0.88	-0.01	-0.16
K2	0.0288703	9.9e-05					1.00	-0.98	0.02	0.05
K3	-0.0288338	0.00013						1.00	-0.02	-0.04
P1	-0.00023401	3.9e-06							1.00	0.11
P2	-0.00301601	2.9e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

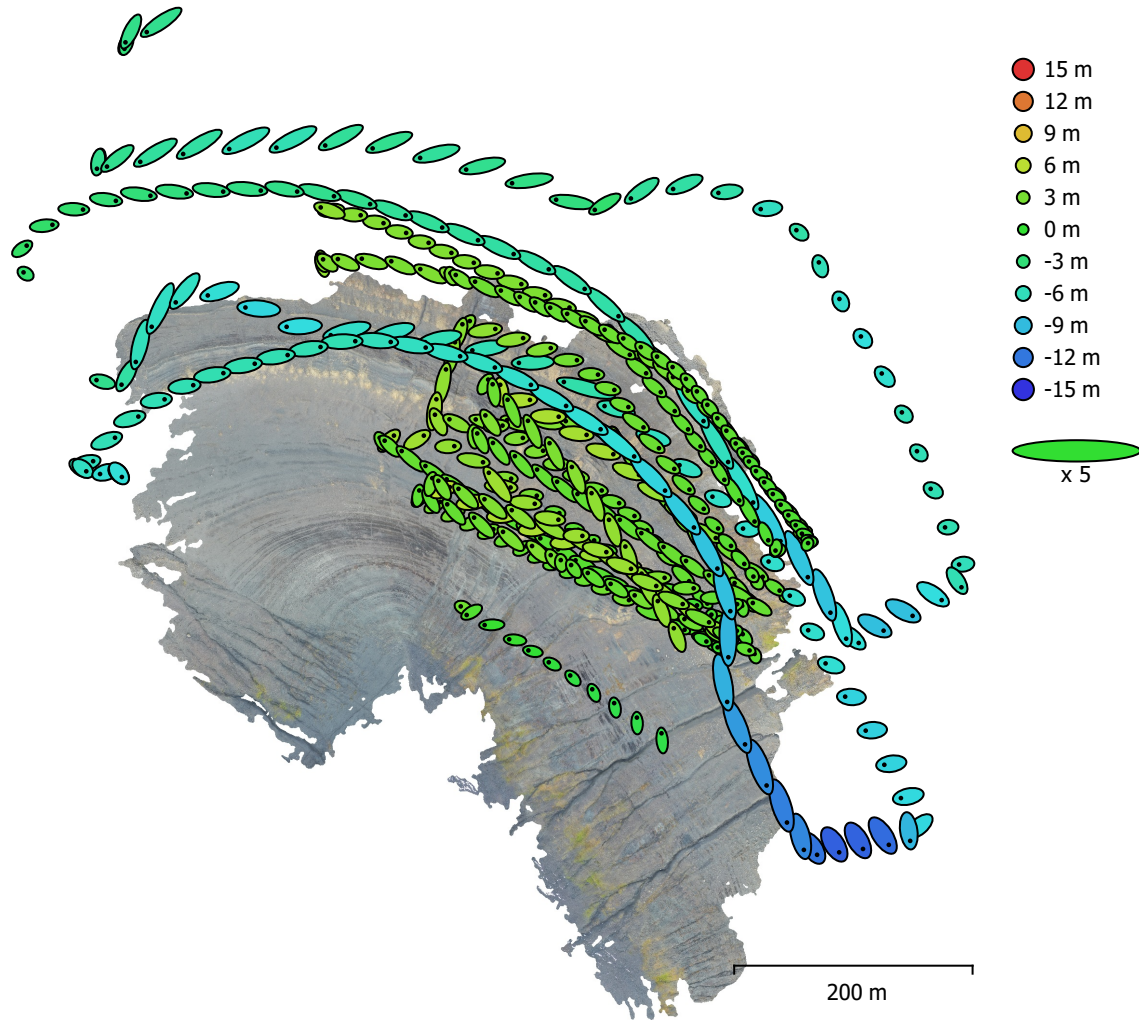


Fig. 3. Camera locations and error estimates.

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)
2.55527	2.02525	4.32192	3.26053	5.41387

Table 3. Average camera location error.

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

Digital Elevation Model

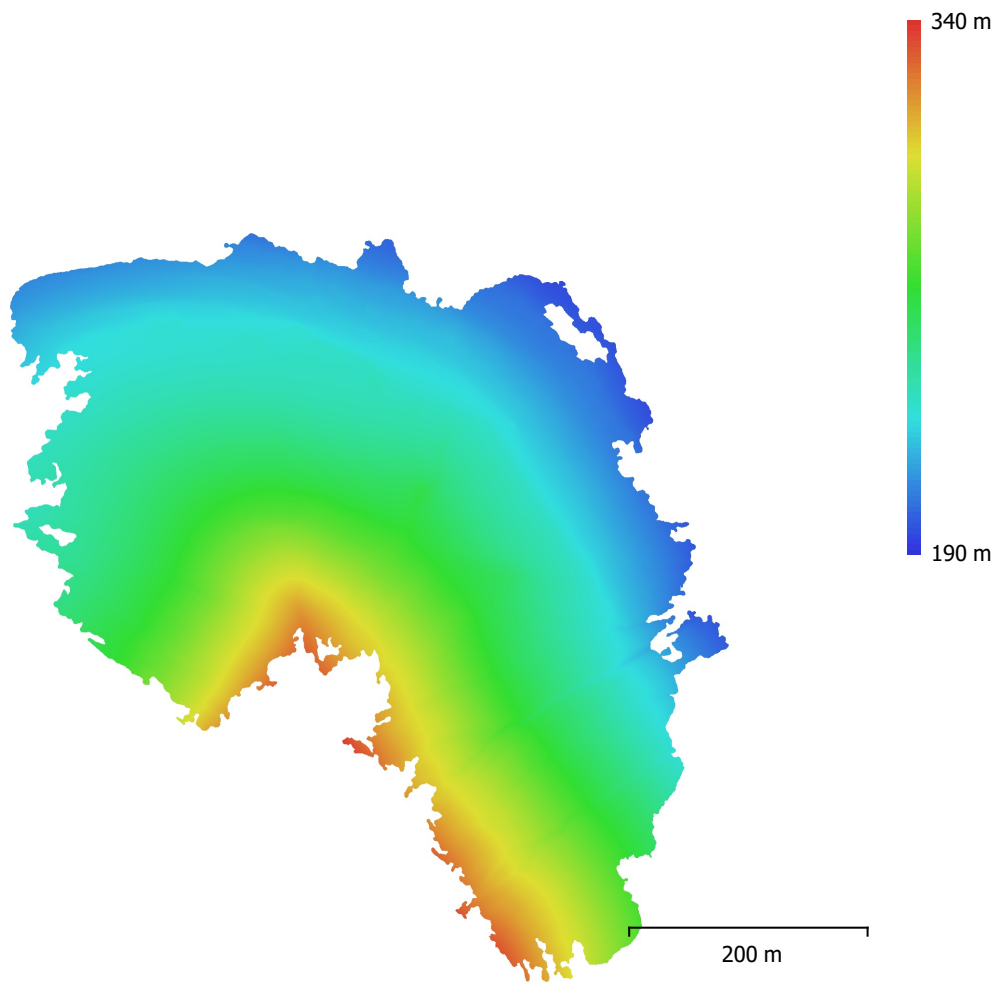


Fig. 4. Reconstructed digital elevation model.

Resolution: 5.93 cm/pix
Point density: 284 points/m²

Processing Parameters

General

Cameras	442
Aligned cameras	442
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	494,629 of 2,388,623
RMS reprojection error	0.127002 (0.207635 pix)
Max reprojection error	1.06073 (2.34776 pix)
Mean key point size	1.5605 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.46679

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	3 minutes 21 seconds
Matching memory usage	2.53 GB
Alignment time	2 minutes 20 seconds
Alignment memory usage	981.91 MB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	12 seconds
Software version	1.7.2.12040
File size	144.57 MB

Depth Maps

Count	425
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Depth maps generation parameters

Quality	High
Filtering mode	Mild
Processing time	0 seconds
Memory usage	3.75 GB
Software version	1.7.2.12040
File size	3.19 GB

Dense Point Cloud

Points	37,966,371
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Mild
Processing time	0 seconds
Memory usage	3.75 GB

Dense cloud generation parameters

Processing time	1 minutes 18 seconds
Memory usage	20.27 GB
Software version	1.7.2.12040
File size	2.49 GB
Model	
Faces	7,576,107
Vertices	3,797,857
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
Processing time	0 seconds
Memory usage	3.75 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	26 minutes 37 seconds
Memory usage	23.17 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 16 seconds
UV mapping memory usage	4.26 GB
Blending time	6 minutes 6 seconds
Blending memory usage	6.88 GB
Software version	1.7.2.12040
File size	515.72 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Processing time	0 seconds
Memory usage	3.75 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	High
Enable ghosting filter	No
Processing time	41 seconds
Memory usage	4.56 GB
Software version	1.7.2.12040
File size	1.03 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