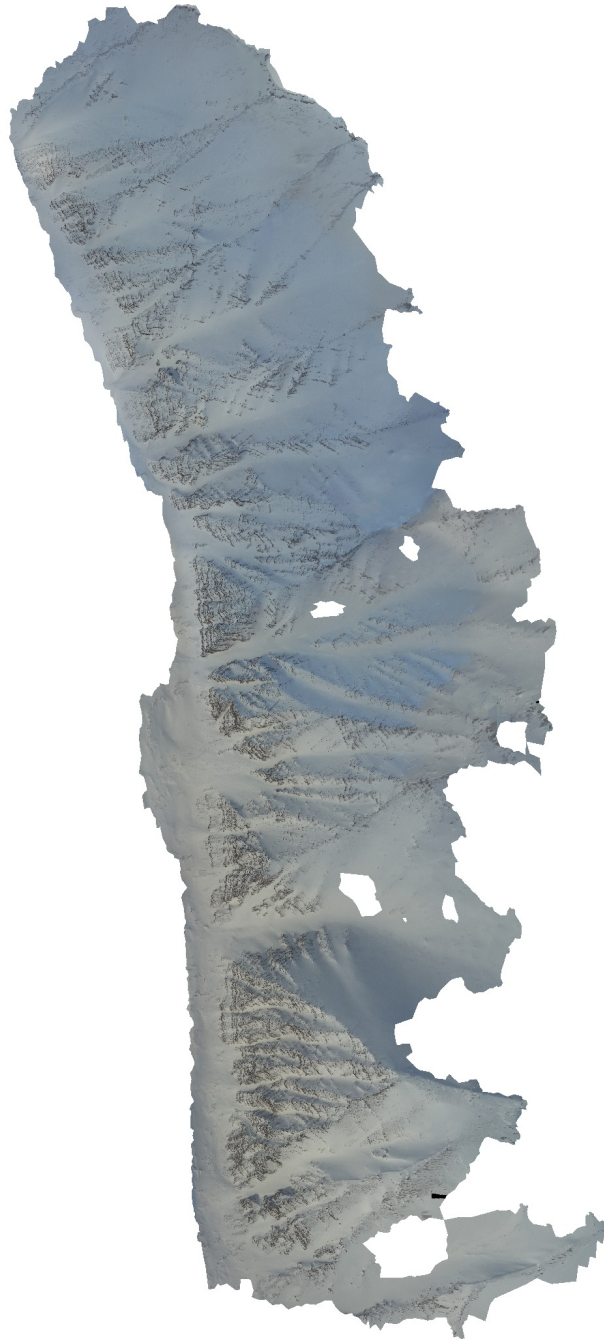


Processing Report

Documenting processing parameters and user settings.

01 August 2023



Survey Data

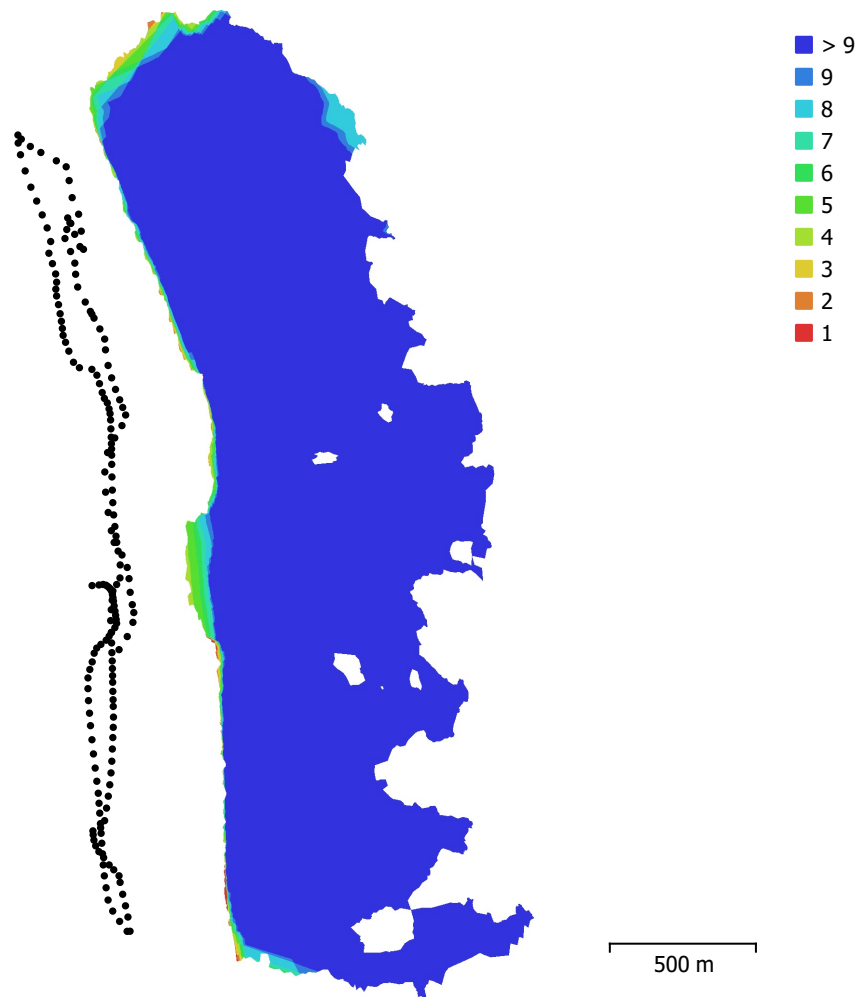


Fig. 1. Camera locations and image overlap.

Number of images:	188	Camera stations:	188
Flying altitude:	498 m	Tie points:	83,964
Ground resolution:	0.129 m/pix	Projections:	275,603
Coverage area:	2.56e+06 m ²	Reprojection error:	0.203 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Test_Pro (10.26mm)	5472 x 3648	10.26 mm	2.41 x 2.41 µm	No

Table 1. Cameras.

Camera Calibration

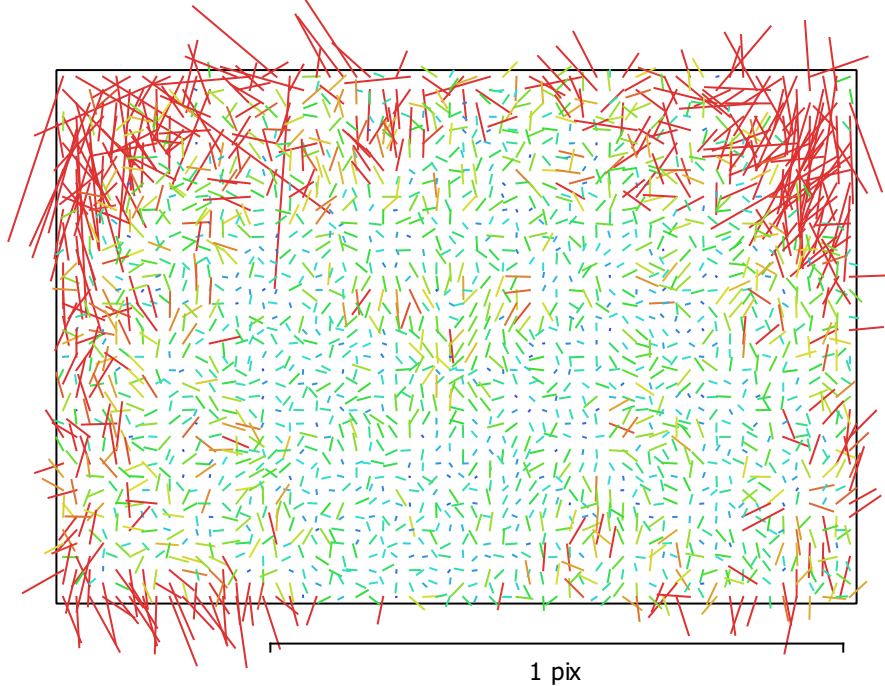


Fig. 2. Image residuals for Test_Pro (10.26mm).

Test_Pro (10.26mm)

188 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	4326.12	0.13	1.00	0.10	-0.62	0.20	0.01	-0.02	0.06	-0.15
Cx	-9.28439	0.22		1.00	-0.09	0.03	-0.00	0.01	0.96	-0.03
Cy	-33.7835	0.21			1.00	-0.14	0.05	-0.04	-0.05	0.62
K1	-0.0124528	4.5e-05				1.00	-0.91	0.83	0.03	-0.19
K2	0.0047541	0.00018					1.00	-0.98	-0.00	0.06
K3	-0.0100337	0.00024						1.00	0.00	-0.06
P1	-0.00033117	1.3e-05							1.00	-0.03
P2	-0.00111849	8.8e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

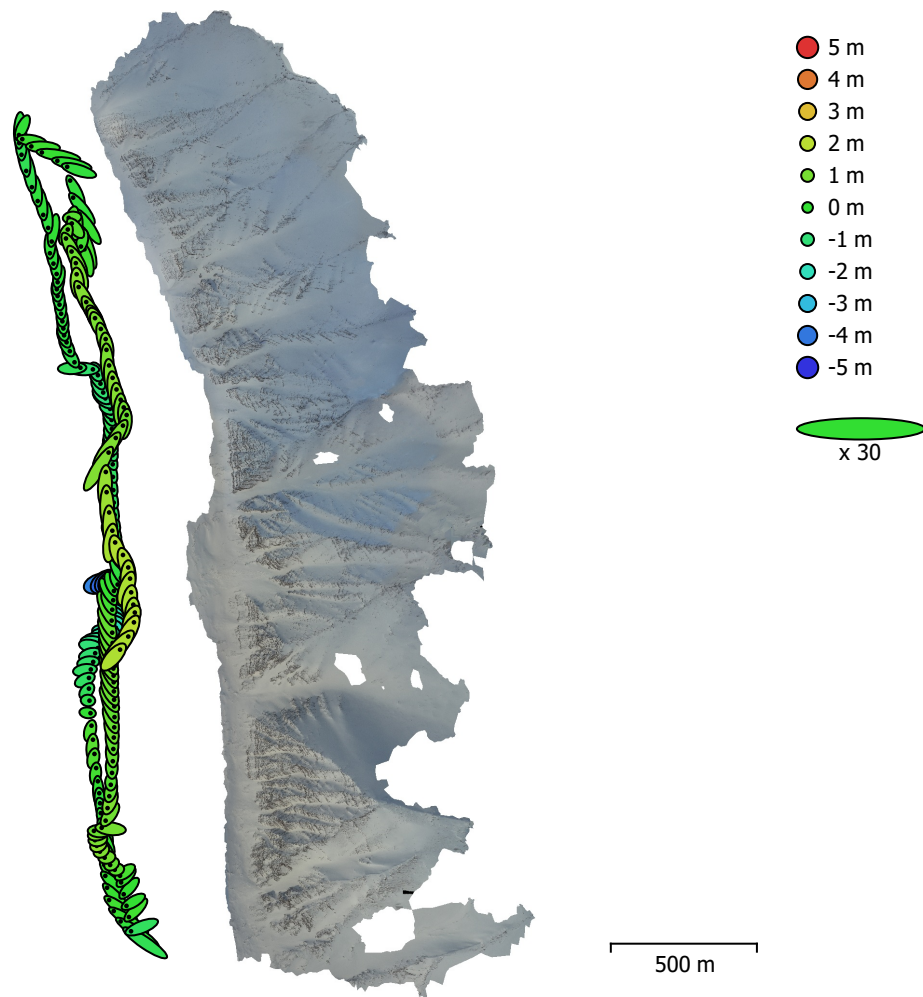


Fig. 3. Camera locations and error estimates.

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)
1.16482	1.78553	1.11826	2.13188	2.40737

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

Digital Elevation Model

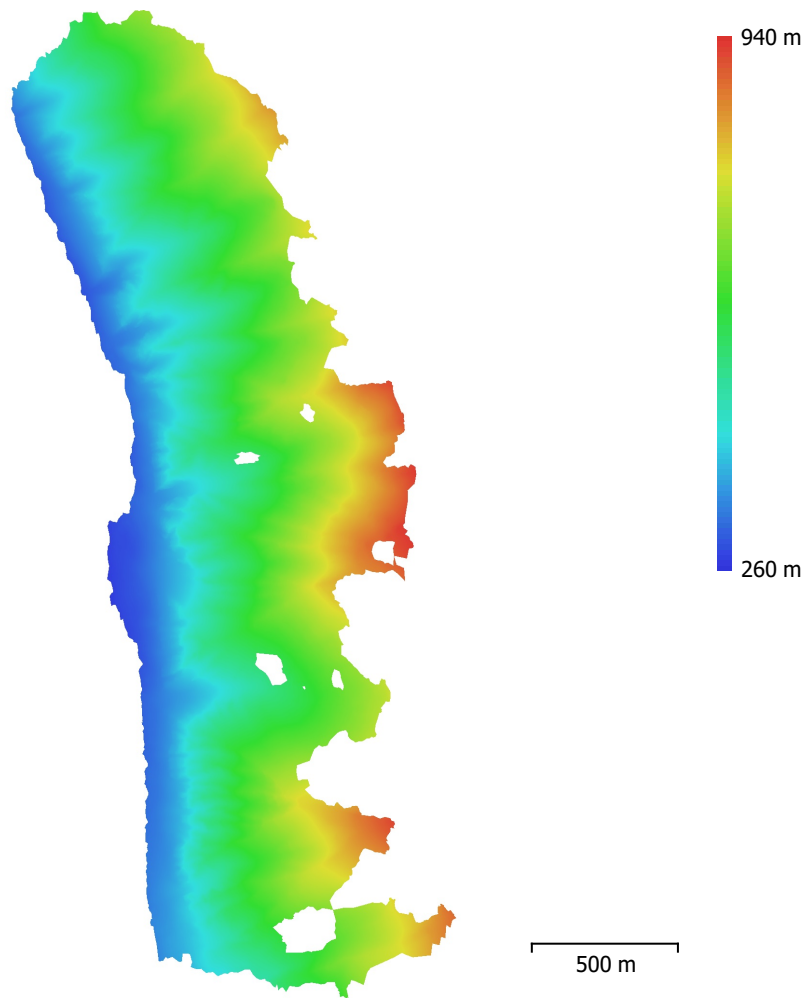


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.258 m/pix
Point density: 15.1 points/m²

Processing Parameters

General

Cameras	188
Aligned cameras	188
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	83,964 of 573,625
RMS reprojection error	0.142135 (0.202902 pix)
Max reprojection error	0.53939 (0.970112 pix)
Mean key point size	1.41196 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	6.16677

Alignment parameters

Accuracy	Highest
Generic preselection	Yes
Reference preselection	No
Key point limit	60,000
Key point limit per Mpx	1,000
Tie point limit	0
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	No
Matching time	2 minutes 25 seconds
Matching memory usage	2.52 GB
Alignment time	38 seconds
Alignment memory usage	1.26 GB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	7 seconds
Date created	2023:06:12 14:20:23
Software version	2.0.1.15925
File size	57.56 MB

Depth Maps

Count	188
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Depth maps generation parameters

Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	12 minutes 37 seconds
Memory usage	3.67 GB
Date created	2023:06:15 13:42:26
Software version	2.0.2.16334
File size	1011.42 MB

Point Cloud

Points	53,096,283
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Point attributes

Color	3 bands, uint8
Normal	

Confidence	1 - 71
Point classes	
Created (never classified)	35,002,715
High Noise	18,093,568
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	12 minutes 37 seconds
Memory usage	3.67 GB
Point cloud generation parameters	
Processing time	43 minutes 5 seconds
Memory usage	9.99 GB
Date created	2023:06:15 13:58:31
Software version	2.0.2.16334
File size	746.71 MB
Model	
Faces	1,903,269
Vertices	952,295
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	16
Processing time	12 minutes 37 seconds
Memory usage	3.67 GB
Point cloud generation parameters	
Processing time	43 minutes 5 seconds
Memory usage	9.99 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Point cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	14 minutes 13 seconds
Memory usage	8.16 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	1 minutes 35 seconds
UV mapping memory usage	2.68 GB
Blending time	3 minutes 24 seconds
Blending memory usage	4.94 GB
Blending GPU memory usage	4.42 GB
Date created	2023:06:16 12:37:20
Software version	2.0.2.16334
File size	237.65 MB
Tiled Model	
Texture	3 bands, uint8
Reconstruction parameters	
Source data	Mesh
Tile size	256

Face count	High
Enable ghosting filter	No
Processing time	31 minutes 32 seconds
Memory usage	3.48 GB
Date created	2023:06:16 13:01:14
Software version	2.0.2.16334
File size	405.52 MB

Additional Parameters

Sparse cloud reconstruction uncertainty	23.2
Sparse cloud projection accuracy	2
Sparse cloud reprojection error	0.3
Point cloud confidence (minimum threshold)	5
Mesh connected components	99

System

Software name	Agisoft Metashape Professional
Software version	2.0.2 build 16334
OS	Windows 64 bit
RAM	127.71 GB
CPU	Intel(R) Xeon(R) Gold 5122 CPU @ 3.60GHz
GPU(s)	Quadro P5000