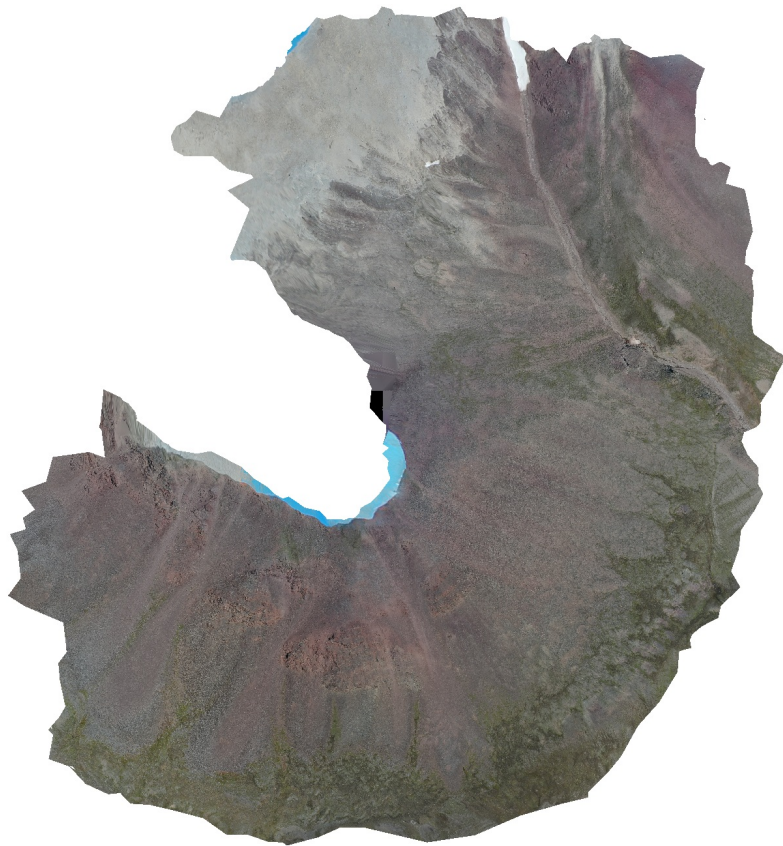


# Nidedalen

Processing Report

06 July 2023



# Survey Data

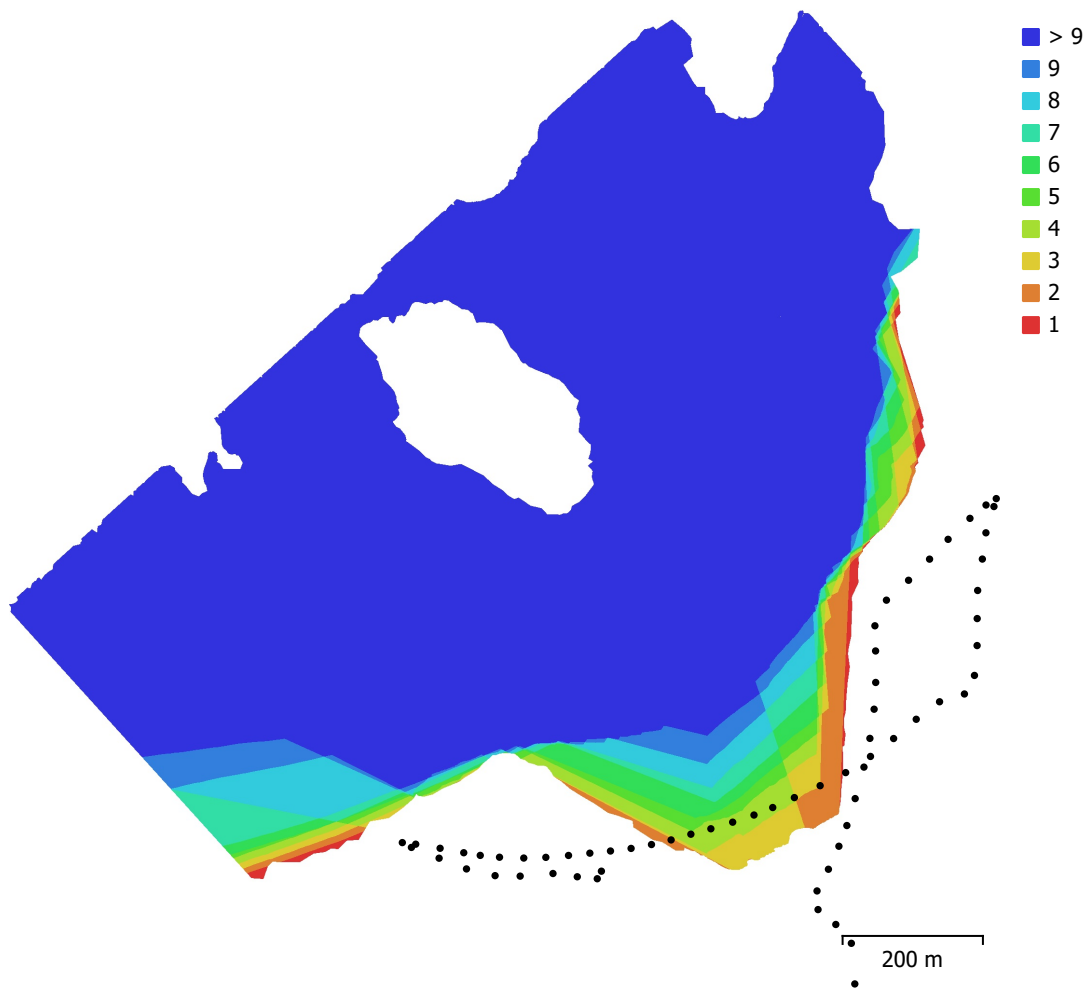


Fig. 1. Camera locations and image overlap.

Number of images:	65	Camera stations:	65
Flying altitude:	251 m	Tie points:	94,785
Ground resolution:	8.01 cm/pix	Projections:	283,898
Coverage area:	0.907 km <sup>2</sup>	Reprojection error:	0.307 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Test_Pro (10.26mm)	5472 x 3648	10.26 mm	2.41 x 2.41 $\mu$ m	No

Table 1. Cameras.

# Camera Calibration

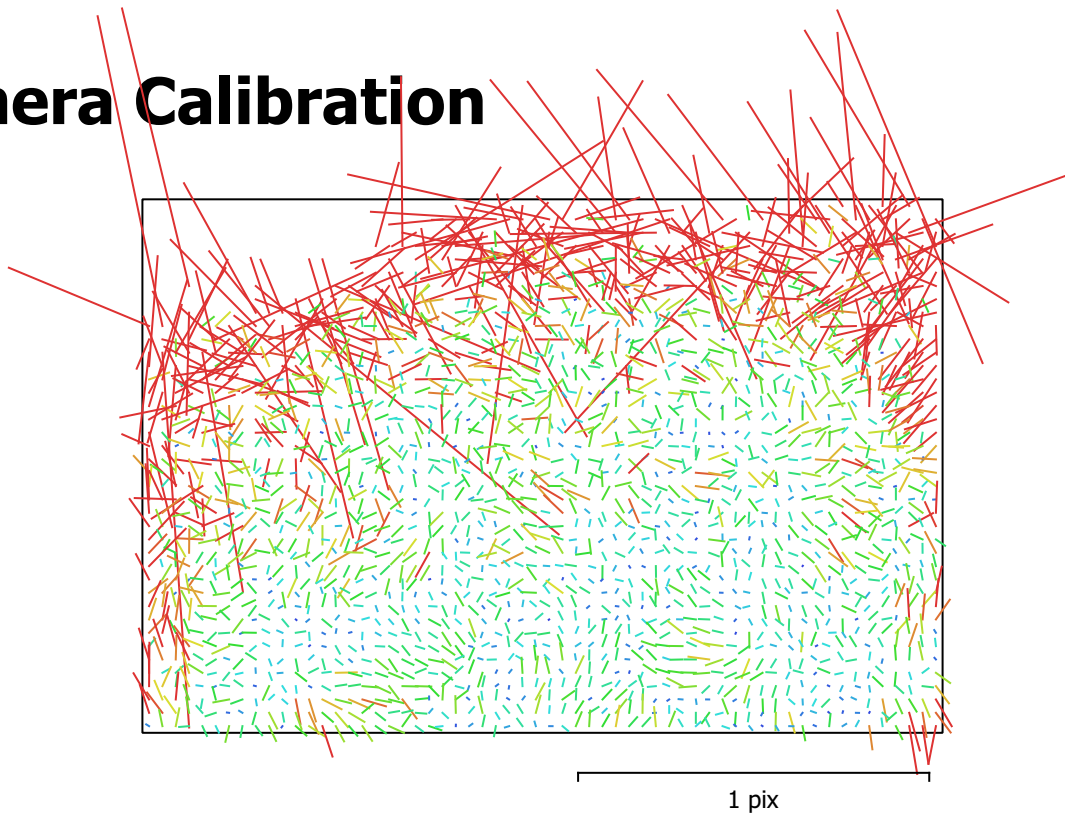


Fig. 2. Image residuals for Test\_Pro (10.26mm).

## Test\_Pro (10.26mm)

65 images

Type	Resolution	Focal Length	Pixel Size
<b>Frame</b>	<b>5472 x 3648</b>	<b>10.26 mm</b>	<b>2.41 x 2.41 <math>\mu</math>m</b>

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>4337.25</b>	0.17	1.00	-0.14	-0.72	0.15	0.08	-0.08	-0.14	-0.35
<b>Cx</b>	<b>-3.50784</b>	0.26		1.00	-0.08	-0.01	-0.03	0.03	0.96	-0.12
<b>Cy</b>	<b>-93.049</b>	0.27			1.00	-0.05	-0.05	0.04	-0.12	0.57
<b>K1</b>	<b>0.0123778</b>	6.5e-05				1.00	-0.92	0.86	-0.04	-0.18
<b>K2</b>	<b>-0.0479338</b>	0.00023					1.00	-0.98	-0.02	0.00
<b>K3</b>	<b>0.03894</b>	0.00027						1.00	0.02	0.00
<b>P1</b>	<b>0.000570324</b>	2e-05							1.00	-0.11
<b>P2</b>	<b>-0.00297265</b>	8.8e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Locations

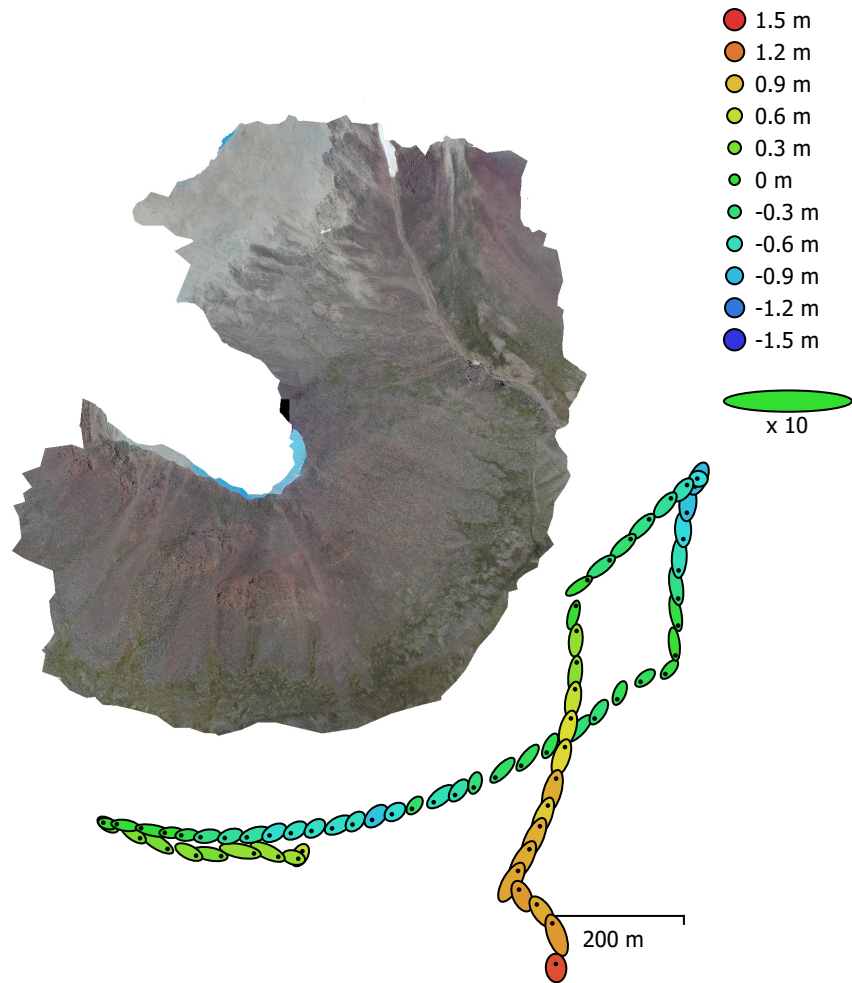


Fig. 3. Camera locations and error estimates.

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)
1.63251	2.05842	0.580877	2.6272	2.69065

Table 3. Average camera location error.

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

# Digital Elevation Model

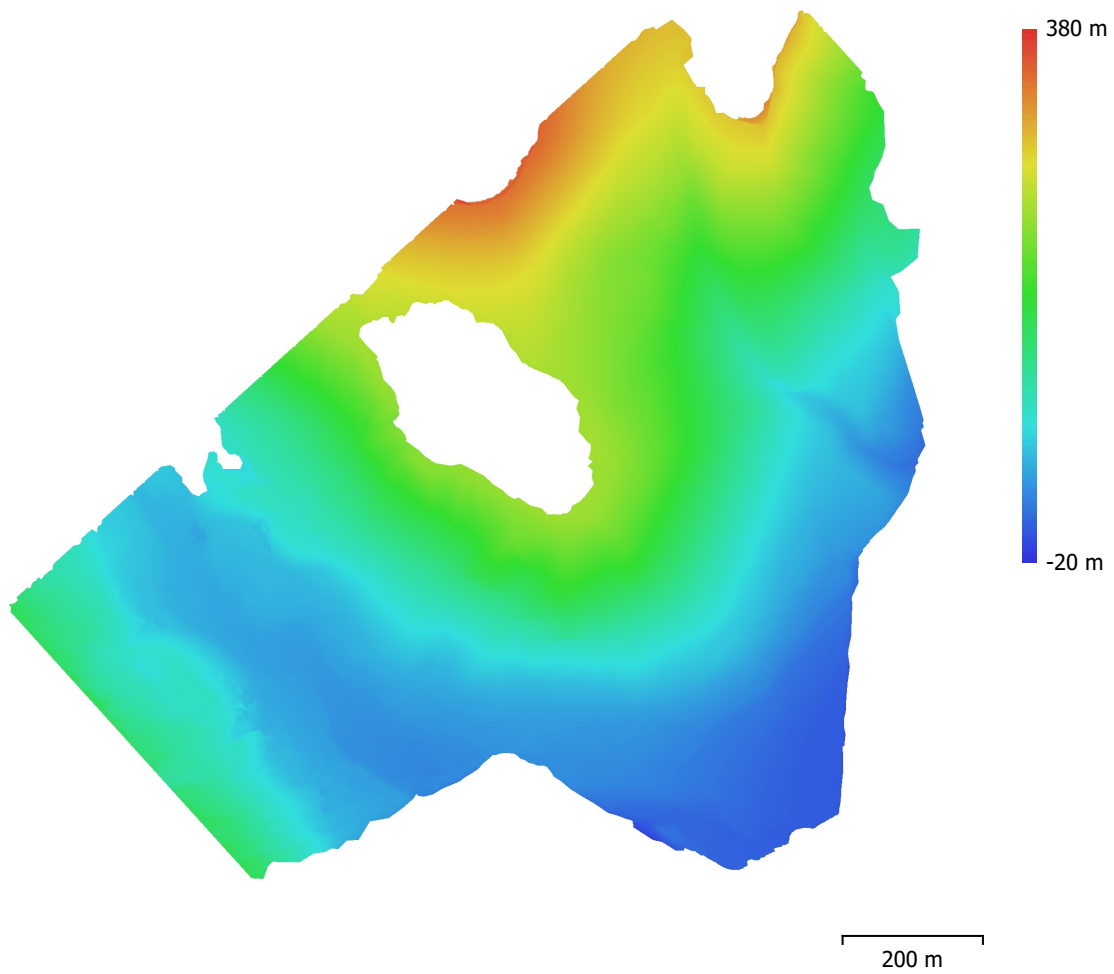


Fig. 4. Reconstructed digital elevation model.

Resolution: 76.9 cm/pix  
Point density: 1.69 points/m<sup>2</sup>

# Processing Parameters

## General

Cameras	65
Aligned cameras	65
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

## Tie Points

Points	94,785 of 403,731
RMS reprojection error	0.132375 (0.307133 pix)
Max reprojection error	0.746697 (2.93124 pix)
Mean key point size	2.27757 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.39156

## Alignment parameters

Accuracy	High
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	1 minutes 51 seconds
Matching memory usage	398.12 MB
Alignment time	2 minutes 22 seconds
Alignment memory usage	123.84 MB

## Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	0 seconds
Date created	2023:07:06 14:05:42
Software version	2.0.2.16334
File size	24.23 MB

## Depth Maps

Count	65
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	4 minutes 47 seconds
Memory usage	2.42 GB
Date created	2023:07:06 14:17:36
Software version	2.0.2.16334
File size	418.81 MB

## Point Cloud

Points	12,953,417
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## Point attributes

Color	3 bands, uint8
Normal	

Confidence	11 - 50
<b>Point classes</b>	
Created (never classified)	12,953,417
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	4 minutes 47 seconds
Memory usage	2.42 GB
<b>Point cloud generation parameters</b>	
Processing time	14 minutes 40 seconds
Memory usage	8.27 GB
Date created	2023:07:06 14:25:00
Software version	2.0.2.16334
File size	503.26 MB
<b>Model</b>	
Faces	644,643
Vertices	323,032
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096 x 10, 4 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	4 minutes 47 seconds
Memory usage	2.42 GB
<b>Reconstruction parameters</b>	
Surface type	Arbitrary
Source data	Depth maps
Interpolation	Disabled
Strict volumetric masks	No
Processing time	8 minutes 13 seconds
Memory usage	3.50 GB
<b>Texturing parameters</b>	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	1 minutes 0 seconds
UV mapping memory usage	606.32 MB
Blending time	1 minutes 35 seconds
Blending memory usage	4.94 GB
Blending GPU memory usage	4.38 GB
Date created	2023:07:06 14:37:25
Software version	2.0.2.16334
File size	201.47 MB
<b>Tiled Model</b>	
Texture	3 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	4 minutes 47 seconds
Memory usage	2.42 GB
<b>Reconstruction parameters</b>	

Source data	Point cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	19 minutes 1 seconds
Memory usage	6.02 GB
Date created	2023:07:06 15:15:07
Software version	2.0.2.16334
File size	82.89 MB

**System**

Software name	Agisoft Metashape Professional
Software version	2.0.2 build 16334
OS	Windows 64 bit
RAM	127.68 GB
CPU	12th Gen Intel(R) Core(TM) i9-12900
GPU(s)	NVIDIA GeForce RTX 3070