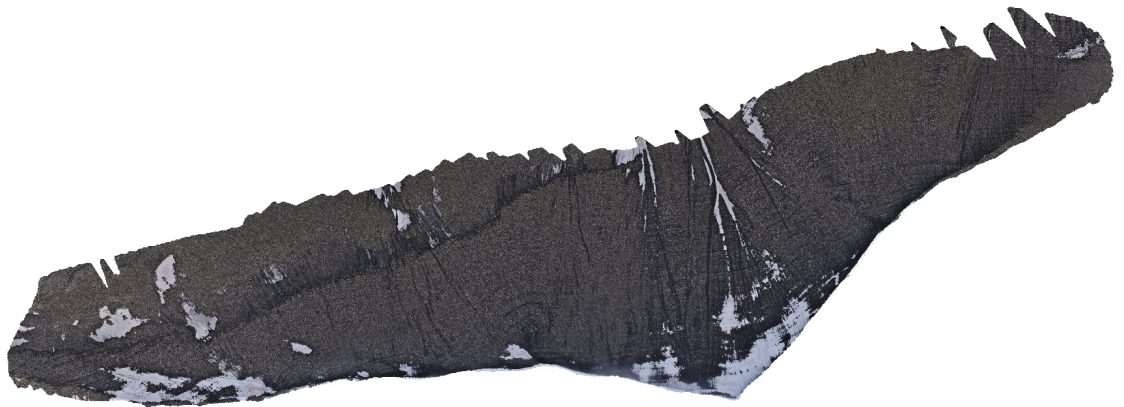


# Lundgrenfjellet

**Filter Component Size: 99%**  
**Decimated at 500000 points**

**24 February 2022**



# Survey Data

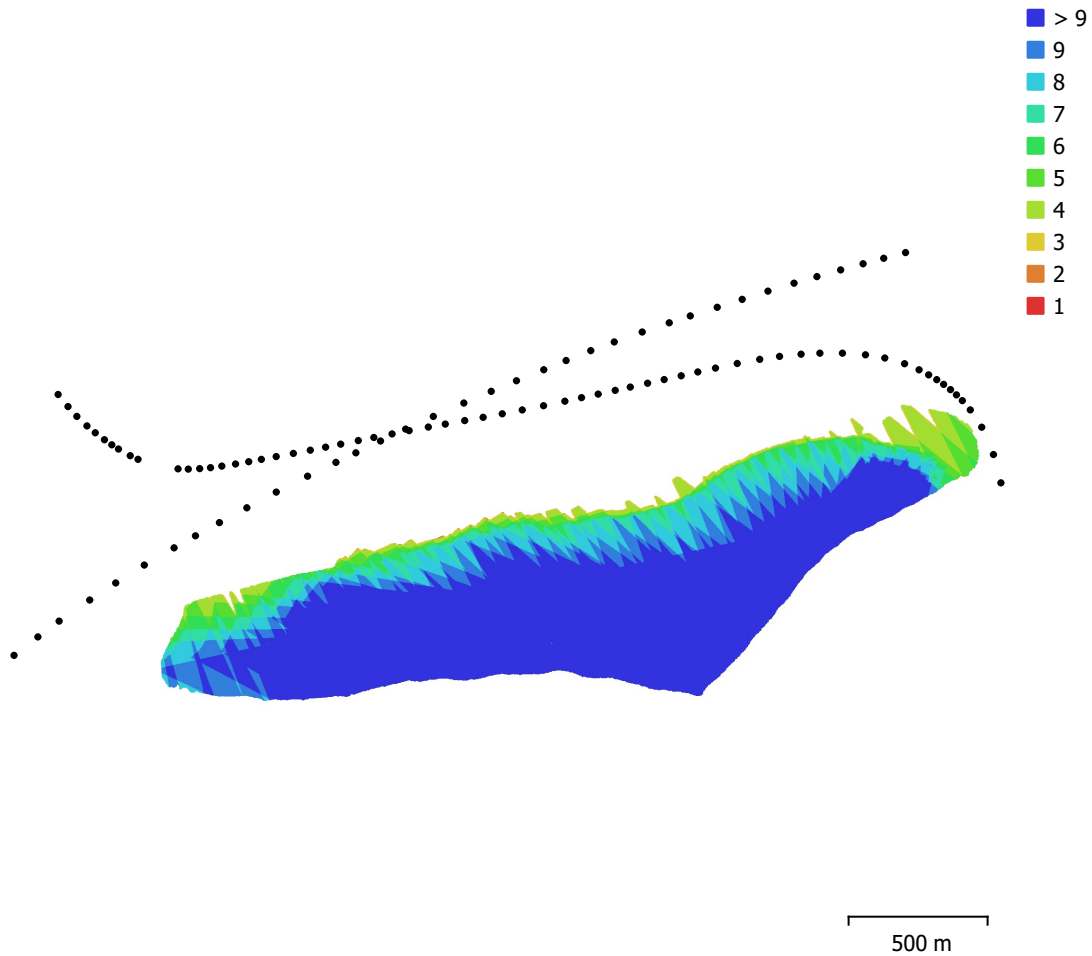


Fig. 1. Camera locations and image overlap.

Number of images:	100	Camera stations:	100
Flying altitude:	695 m	Tie points:	187,341
Ground resolution:	6.59 cm/pix	Projections:	745,948
Coverage area:	1.44 km <sup>2</sup>	Reprojection error:	0.337 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
NIKON D800 (50mm)	4924 x 7374	50 mm	4.88 x 4.88 $\mu$ m	No

Table 1. Cameras.

# Camera Calibration

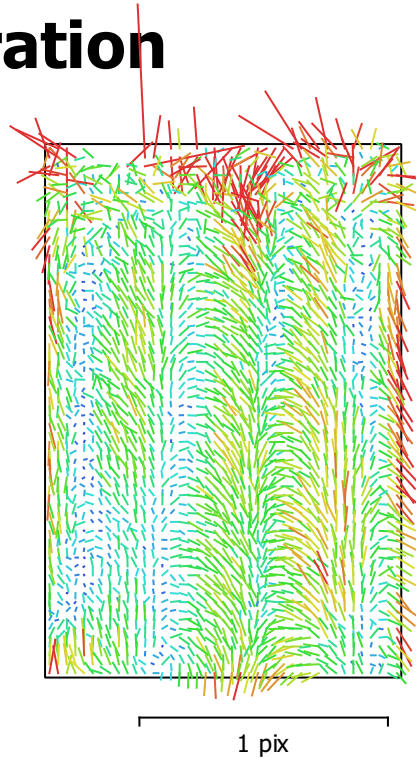


Fig. 2. Image residuals for NIKON D800 (50mm).

## NIKON D800 (50mm)

100 images

Type  
Frame

Resolution  
**4924 x 7374**

Focal Length  
**50 mm**

Pixel Size  
**4.88 x 4.88  $\mu\text{m}$**

	Value	Error	F	B1	B2	K1	K2	K3	P1	P2
<b>F</b>	<b>10562.2</b>	0.33	1.00	-0.90	-0.17	0.01	0.06	-0.04	-0.19	0.02
<b>B1</b>	<b>4.45536</b>	0.29		1.00	0.13	-0.01	-0.04	0.02	0.20	0.06
<b>B2</b>	<b>-17.9857</b>	0.23			1.00	-0.01	0.01	-0.02	-0.50	0.19
<b>K1</b>	<b>-0.110067</b>	5.1e-05				1.00	-0.95	0.89	0.01	-0.02
<b>K2</b>	<b>0.0840239</b>	0.00068					1.00	-0.98	-0.00	-0.00
<b>K3</b>	<b>0.156584</b>	0.0027						1.00	0.00	-0.01
<b>P1</b>	<b>0.000166092</b>	2.8e-06							1.00	-0.09
<b>P2</b>	<b>0.000362246</b>	3.9e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Locations

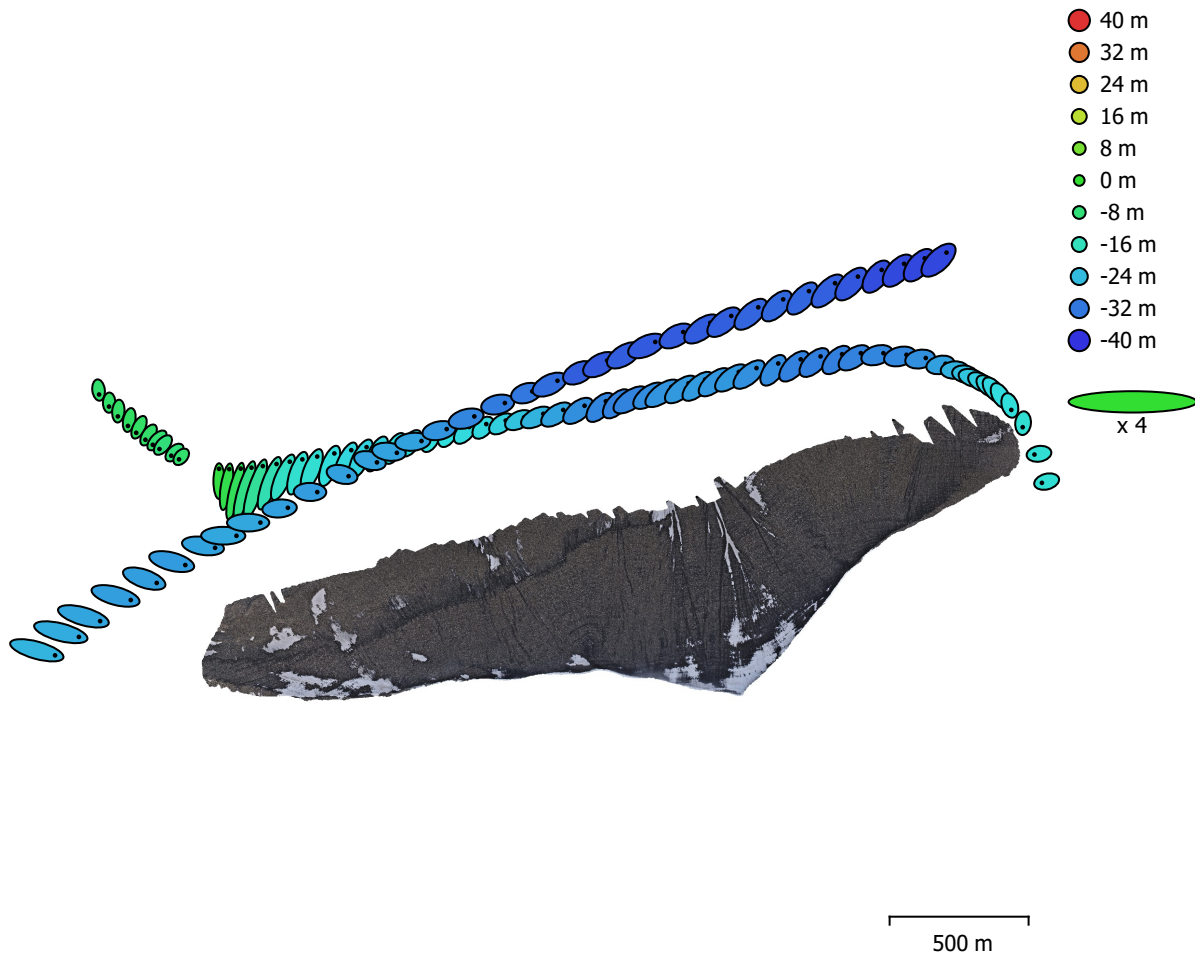


Fig. 3. Camera locations and error estimates.

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)
12.9971	13.3106	25.8273	18.6037	31.83

Table 3. Average camera location error.

X - Easting, Y - Northing, Z - Altitude.

# Digital Elevation Model

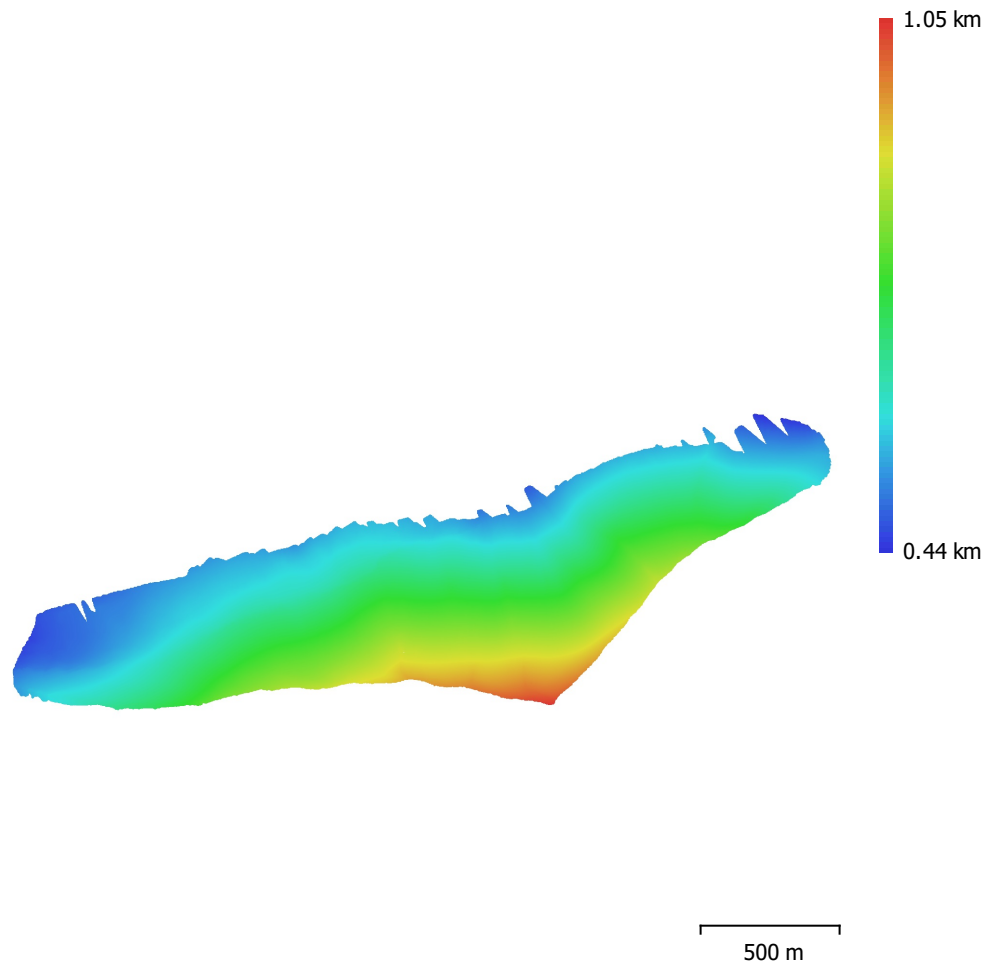


Fig. 4. Reconstructed digital elevation model.

Resolution: 77.6 cm/pix  
Point density: 1.66 points/m<sup>2</sup>

# Processing Parameters

## General

Cameras	100
Aligned cameras	100
Coordinate system	WGS 84 / UTM zone 33N (EPSG::32633)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	187,341 of 212,384
RMS reprojection error	0.128259 (0.337492 pix)
Max reprojection error	0.390009 (19.9952 pix)
Mean key point size	2.50991 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	4.00172

## Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	80,000
Tie point limit	8,000
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	1 minutes 27 seconds
Matching memory usage	2.06 GB
Alignment time	22 seconds
Alignment memory usage	175.01 MB
Software version	1.6.4.10928
File size	17.88 MB

## Depth Maps

Count	100
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Aggressive
Processing time	13 minutes 7 seconds
Memory usage	6.43 GB
Software version	1.6.4.10928
File size	737.95 MB

## Dense Point Cloud

Points	137,381,469
Point colors	3 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Aggressive
Processing time	13 minutes 7 seconds
Memory usage	6.43 GB
<b>Dense cloud generation parameters</b>	
Processing time	10 minutes 13 seconds
Memory usage	12.38 GB
Software version	1.6.4.10928
File size	3.39 GB

## Model

Faces	4,999,999
Vertices	2,503,519
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096 x 10, 4 bands, uint8
<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	2 minutes 3 seconds
UV mapping memory usage	3.89 GB
Blending time	1 minutes 39 seconds
Blending memory usage	5.84 GB
File size	417.24 MB
<b>Tiled Model</b>	
Texture	3 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Aggressive
Processing time	13 minutes 7 seconds
Memory usage	6.43 GB
<b>Reconstruction parameters</b>	
Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	1 hours 27 minutes
Memory usage	4.66 GB
Software version	1.7.2.12040
File size	805.71 MB
<b>System</b>	
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) i9-10900 CPU @ 2.80GHz
GPU(s)	NVIDIA GeForce RTX 2080 SUPER