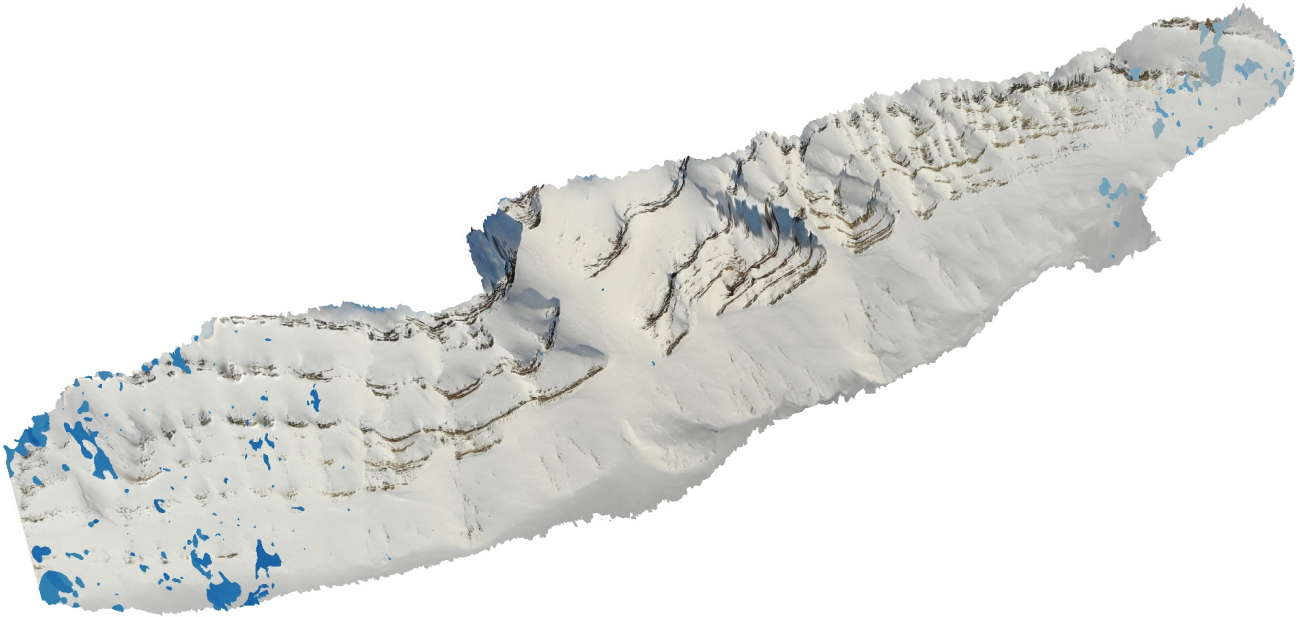


Productustoppen

Processing Report
26 February 2021



Survey Data

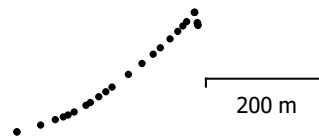
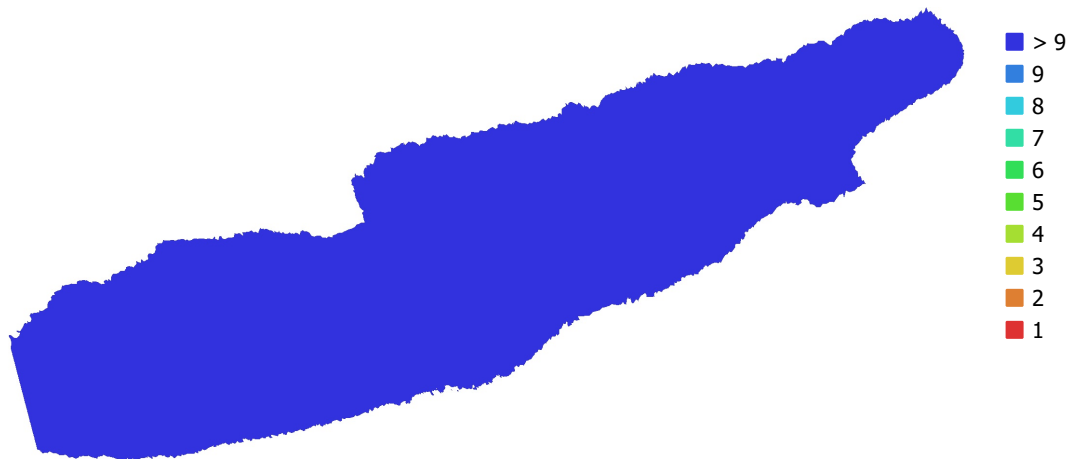


Fig. 1. Camera locations and image overlap.

Number of images:	29	Camera stations:	29
Flying altitude:	1.36 km	Tie points:	7,684
Ground resolution:	39.5 cm/pix	Projections:	75,851
Coverage area:	0.544 km ²	Reprojection error:	0.815 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC2103 (4.5mm)	4056 x 3040	4.5 mm	1.6 x 1.6 μ m	No

Table 1. Cameras.

Camera Calibration

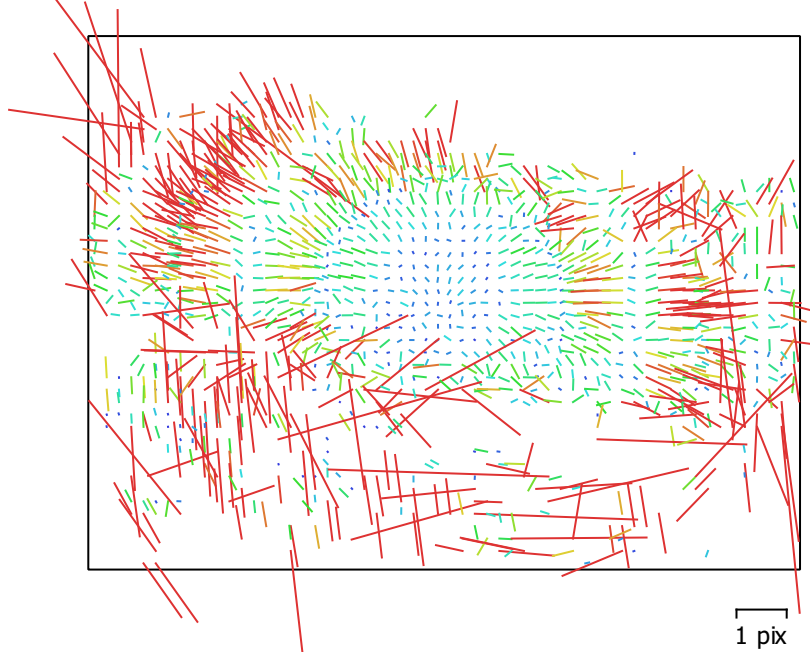


Fig. 2. Image residuals for FC2103 (4.5mm).

FC2103 (4.5mm)

29 images

Type **Frame** Resolution **4056 x 3040** Focal Length **4.5 mm** Pixel Size **1.6 x 1.6 μm**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2913.45	0.76	1.00	-0.05	0.13	0.84	-0.74	0.72	-0.05	0.12
Cx	-24.5482	0.13		1.00	-0.24	-0.07	0.06	-0.04	0.60	-0.13
Cy	-5.09142	0.31			1.00	0.08	0.02	-0.04	-0.13	0.63
K1	0.333072	0.00045				1.00	-0.97	0.94	-0.05	0.06
K2	-1.25411	0.002					1.00	-0.99	0.06	-0.02
K3	1.3389	0.0032						1.00	-0.03	0.00
P1	0.000347247	2.2e-05							1.00	-0.28
P2	0.00163662	4.5e-05								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

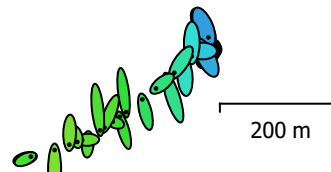
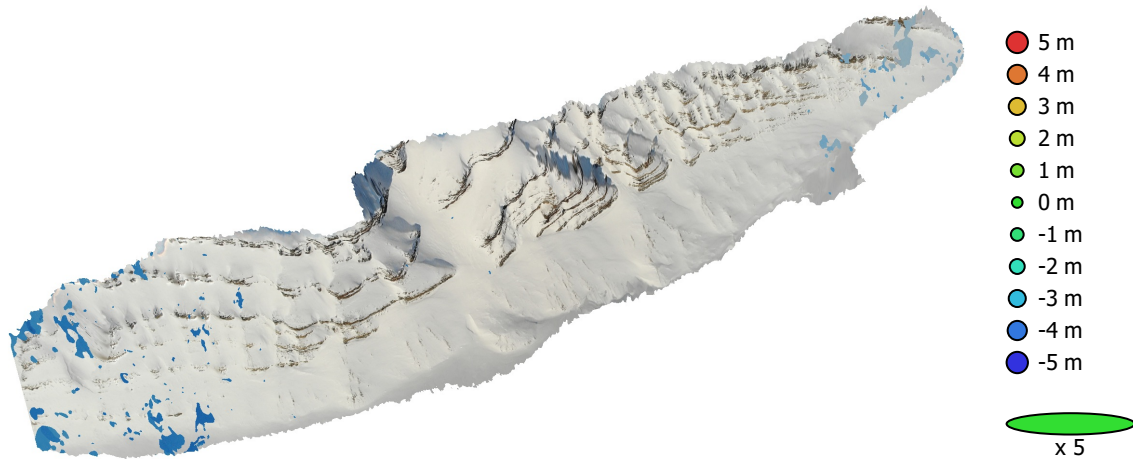


Fig. 3. Camera locations and error estimates.

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)
2.86296	7.45727	2.08428	7.98796	8.2554

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

Digital Elevation Model

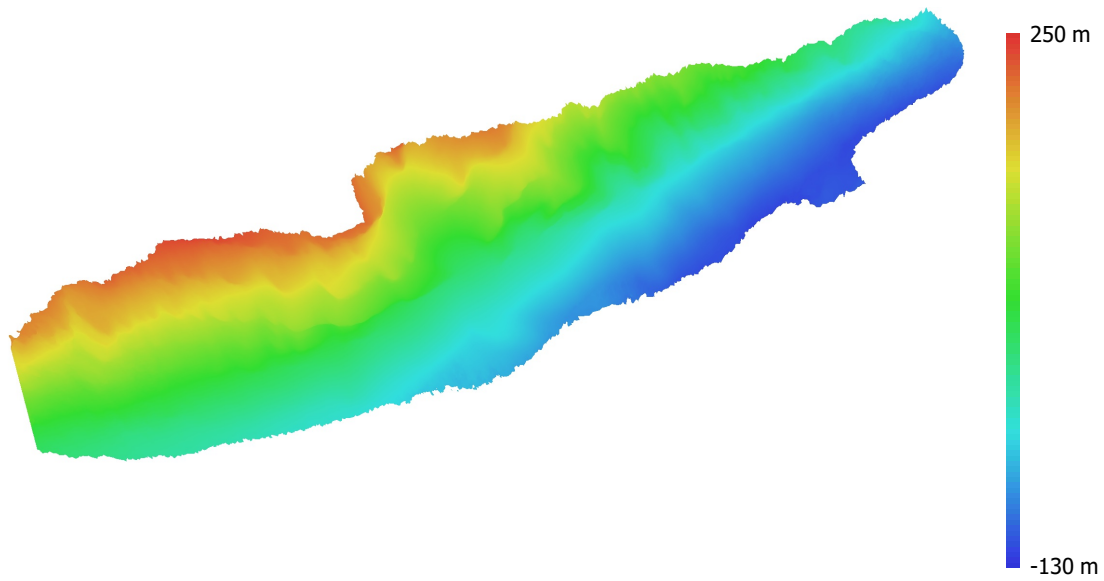


Fig. 4. Reconstructed digital elevation model.

Resolution: 79 cm/pix
Point density: 1.6 points/m²

Processing Parameters

General

Cameras	29
Aligned cameras	29
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	7,684 of 11,882
RMS reprojection error	0.165349 (0.815229 pix)
Max reprojection error	0.533537 (28.0511 pix)
Mean key point size	4.67628 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	9.88352

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	40,000
Tie point limit	4,000
Guided image matching	No
Adaptive camera model fitting	No
Matching time	54 seconds
Matching memory usage	255.13 MB
Alignment time	11 seconds
Alignment memory usage	21.92 MB
Software version	1.6.1.10009
File size	2.01 MB

Depth Maps

Count	29
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Processing time	3 minutes 18 seconds
Memory usage	736.30 MB
Software version	1.6.1.10009
File size	45.40 MB

Dense Point Cloud

Points	3,858,834
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Processing time	3 minutes 18 seconds
Memory usage	736.30 MB
Dense cloud generation parameters	
Processing time	2 minutes 27 seconds
Memory usage	2.78 GB
Software version	1.6.1.10009
File size	50.46 MB

Model

Faces	77,294
Vertices	39,440
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	3 minutes 18 seconds
Memory usage	736.30 MB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	2 minutes 54 seconds
Memory usage	2.19 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	12 minutes 10 seconds
Blending time	2 minutes 14 seconds
Software version	1.6.1.10009
File size	115.16 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Processing time	3 minutes 18 seconds
Memory usage	736.30 MB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	2 minutes 26 seconds
Memory usage	2.27 GB
Software version	1.7.1.11797
File size	29.38 MB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.1 build 11797
OS	Windows 64 bit
RAM	127.78 GB
CPU	Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz
GPU(s)	GeForce RTX 2080