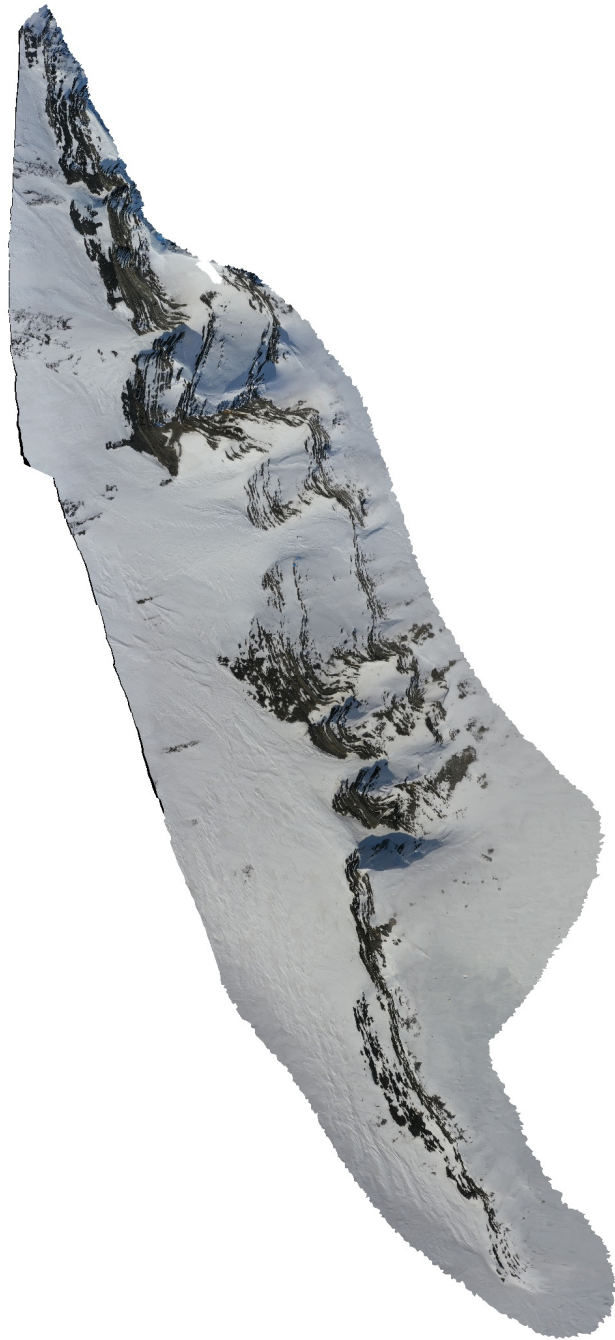


# VestreGrøn fjordbreen Peak 627

Processing Report  
23 February 2021



# Survey Data

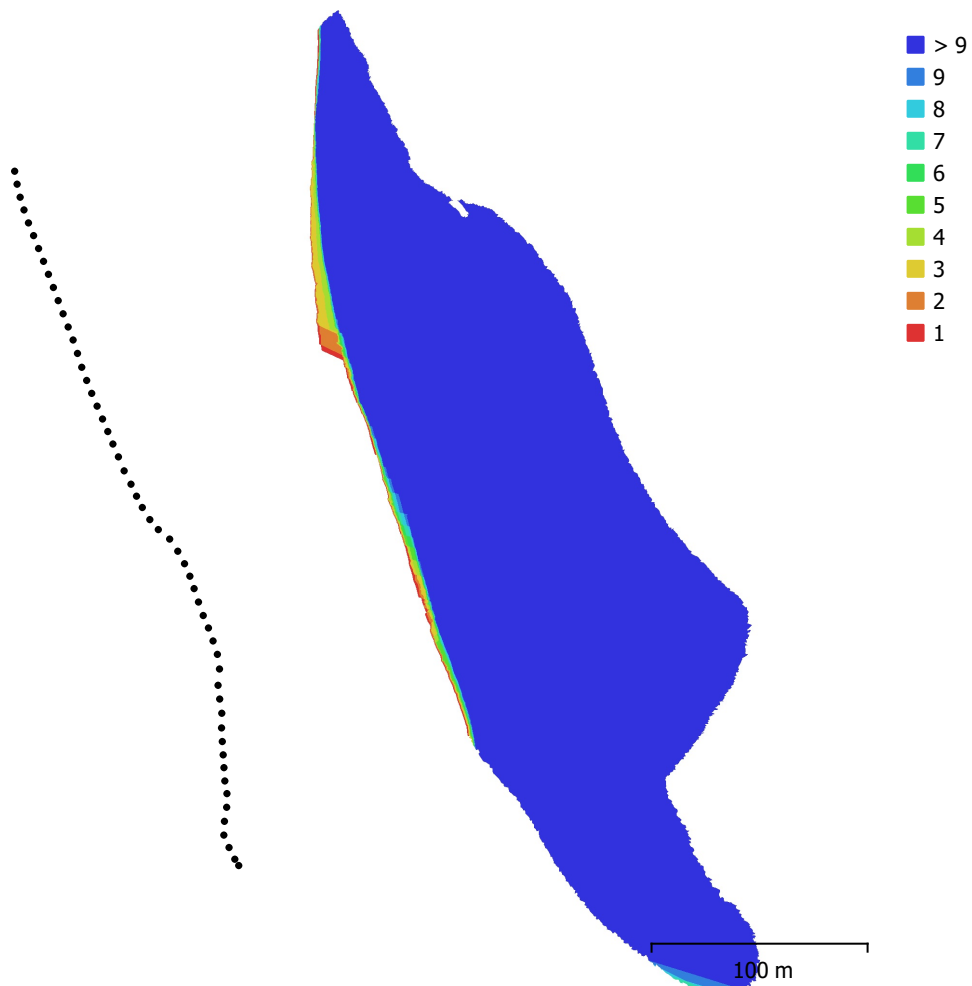


Fig. 1. Camera locations and image overlap.

Number of images:	55	Camera stations:	55
Flying altitude:	178 m	Tie points:	10,487
Ground resolution:	4.2 cm/pix	Projections:	156,101
Coverage area:	0.041 km <sup>2</sup>	Reprojection error:	0.426 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
L1D-20c (10.26mm)	5472 x 3648	10.26 mm	2.41 x 2.41 $\mu$ m	No

Table 1. Cameras.

# Camera Calibration

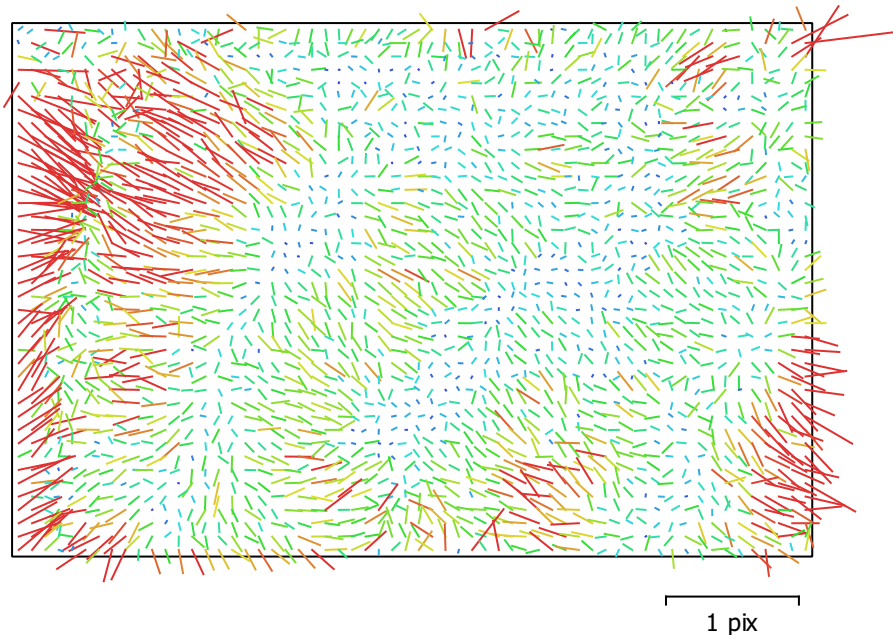


Fig. 2. Image residuals for L1D-20c (10.26mm).

## L1D-20c (10.26mm)

55 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 μm</b>

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>4341.88</b>	0.2	1.00	0.12	-0.56	0.18	0.11	-0.12	0.05	-0.09
<b>Cx</b>	<b>4.72812</b>	0.29		1.00	-0.29	-0.06	0.01	-0.01	0.93	-0.19
<b>Cy</b>	<b>-45.7558</b>	0.3			1.00	-0.07	0.03	-0.03	-0.17	0.62
<b>K1</b>	<b>0.00561792</b>	5e-05				1.00	-0.89	0.83	-0.05	-0.03
<b>K2</b>	<b>0.036208</b>	0.0002					1.00	-0.98	0.01	0.07
<b>K3</b>	<b>-0.039023</b>	0.00025						1.00	-0.01	-0.08
<b>P1</b>	<b>6.43124e-05</b>	2e-05							1.00	-0.15
<b>P2</b>	<b>-0.00382807</b>	1e-05								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Locations

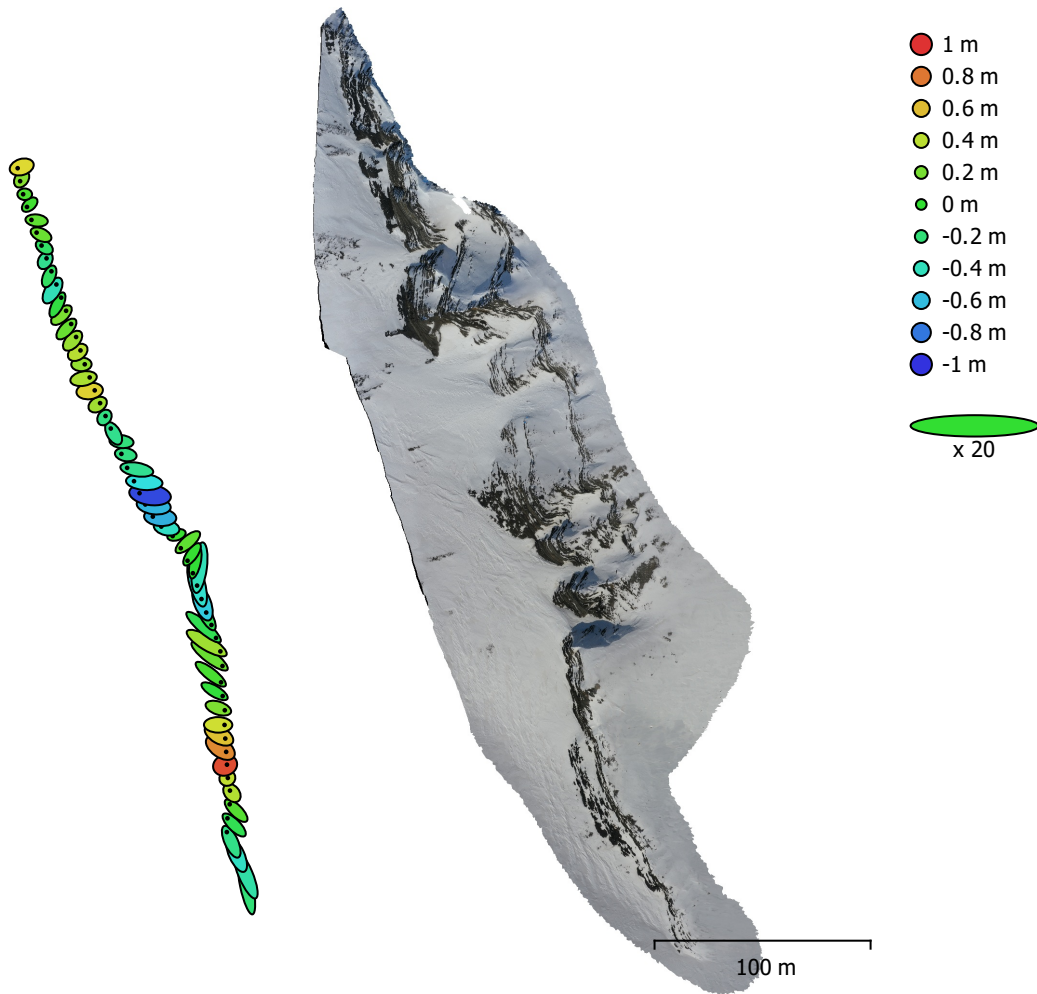


Fig. 3. Camera locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated camera locations are marked with a black dot.

<b>X error (cm)</b>	<b>Y error (cm)</b>	<b>Z error (cm)</b>	<b>XY error (cm)</b>	<b>Total error (cm)</b>
27.8457	32.4703	36.9148	42.775	56.5014

Table 3. Average camera location error.

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

# Digital Elevation Model

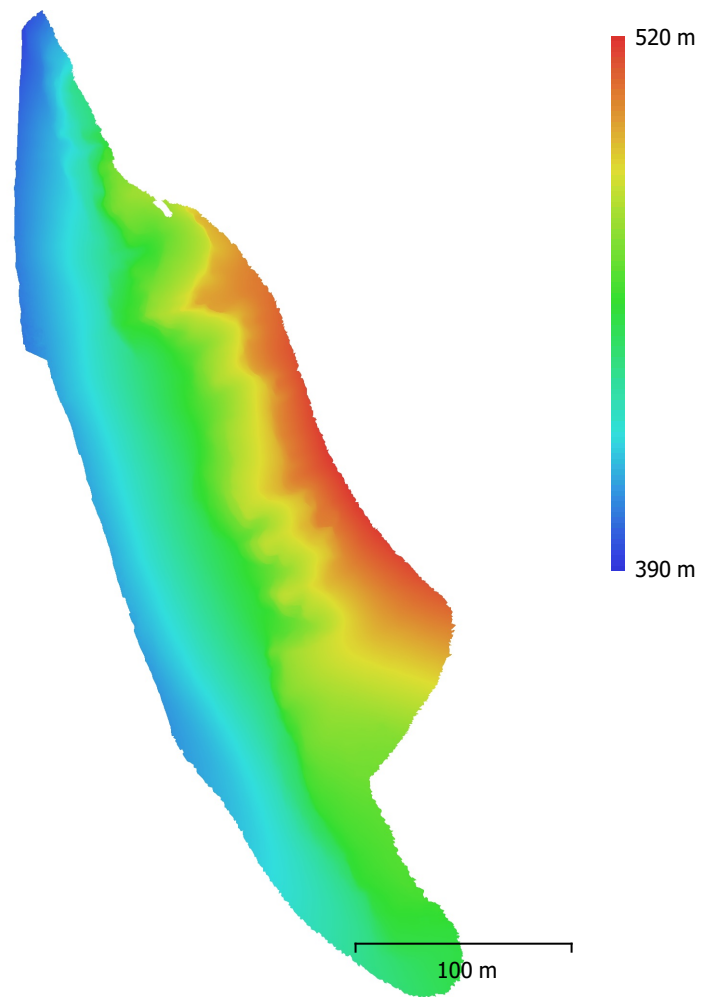


Fig. 4. Reconstructed digital elevation model.

Resolution: 16.8 cm/pix  
Point density: 35.4 points/m<sup>2</sup>

# Processing Parameters

## General

Cameras	55
Aligned cameras	55
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	10,487 of 16,095
RMS reprojection error	0.155499 (0.426316 pix)
Max reprojection error	0.539844 (13.2535 pix)
Mean key point size	2.65663 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	14.7217

## Alignment parameters

Accuracy	High
Generic preselection	No
Reference preselection	No
Key point limit	40,000
Tie point limit	4,000
Guided image matching	No
Adaptive camera model fitting	No
Matching time	11 minutes 7 seconds
Matching memory usage	353.21 MB
Alignment time	16 seconds
Alignment memory usage	21.75 MB

## Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	1 seconds
Software version	1.6.1.10009
File size	3.91 MB

## Depth Maps

Count	55
<b>Depth maps generation parameters</b>	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 21 seconds
Memory usage	921.38 MB
Software version	1.6.1.10009
File size	82.81 MB

## Dense Point Cloud

Points	8,779,890
Point colors	3 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 21 seconds
Memory usage	921.38 MB
<b>Dense cloud generation parameters</b>	
Processing time	3 minutes 37 seconds

Memory usage	3.04 GB
Software version	1.6.1.10009
File size	113.30 MB
<b>Model</b>	
Faces	187,502
Vertices	94,679
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096, 4 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 21 seconds
Memory usage	921.38 MB
<b>Reconstruction parameters</b>	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	4 minutes 21 seconds
Memory usage	4.65 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	4 minutes 21 seconds
Blending time	2 minutes 8 seconds
Software version	1.6.1.10009
File size	28.70 MB
<b>Tiled Model</b>	
Texture	3 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 21 seconds
Memory usage	921.38 MB
<b>Reconstruction parameters</b>	
Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	8 minutes 10 seconds
Memory usage	3.35 GB
Software version	1.7.1.11797
File size	236.05 MB
<b>System</b>	
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