

Bravaisberget

Processing Report
27 January 2022



Survey Data

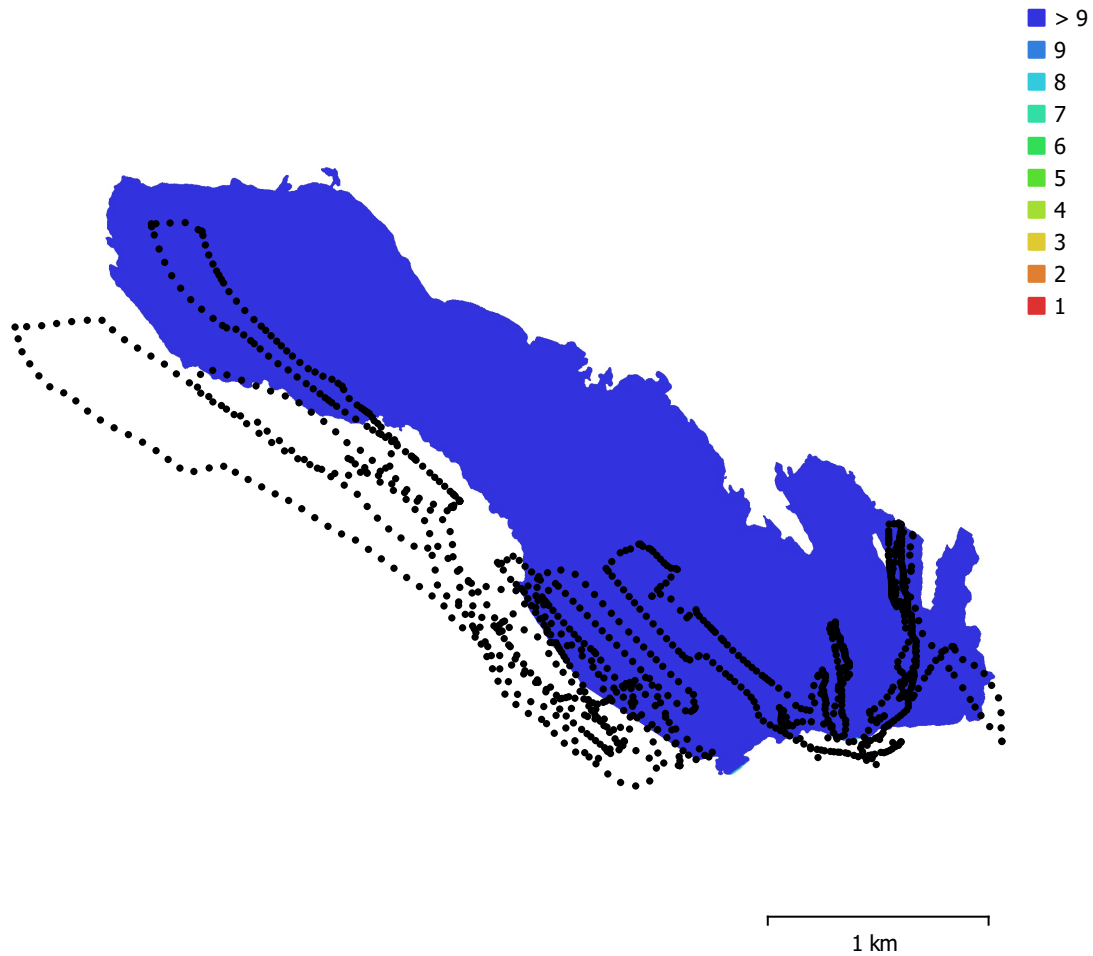


Fig. 1. Camera locations and image overlap.

Number of images:	1,095	Camera stations:	1,095
Flying altitude:	408 m	Tie points:	272,270
Ground resolution:	8.9 cm/pix	Projections:	2,121,893
Coverage area:	4.08 km ²	Reprojection error:	0.874 pix

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

Table 1. Cameras.

Camera Calibration

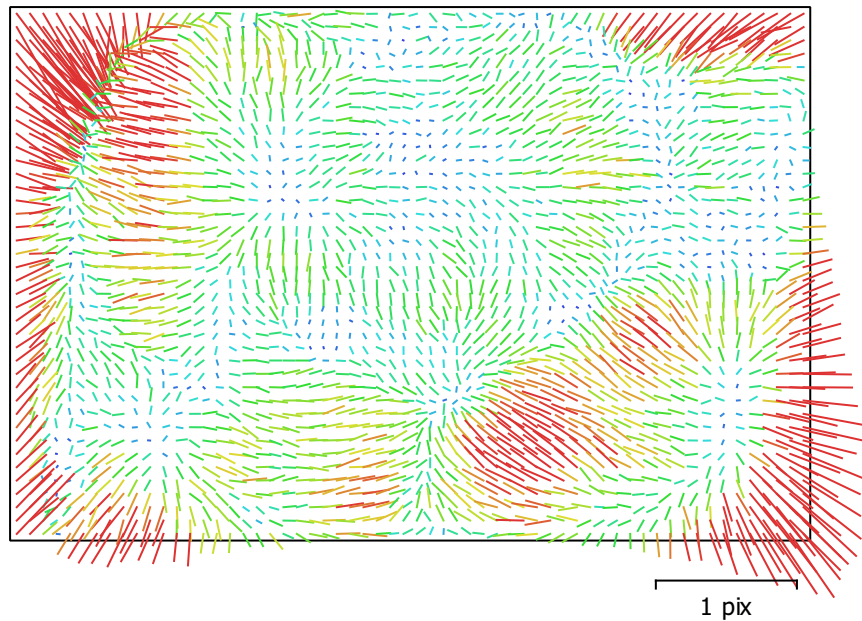


Fig. 2. Image residuals for L1D-20c (10.26mm).

L1D-20c (10.26mm)

1095 images

Type
Frame

Resolution
5472 x 3648

Focal Length
10.26 mm

Pixel Size
2.41 x 2.41 μ m

	Value	Error	F	Cx	Cy	B1	B2	K1	K2	K3	K4	P1	P2
F	4361.8	0.043	1.00	0.00	0.31	-0.76	-0.01	-0.15	0.16	-0.14	0.13	0.02	0.12
Cx	1.18997	0.049		1.00	-0.17	0.01	0.42	-0.00	0.00	-0.00	0.00	0.90	-0.19
Cy	-53.2181	0.062			1.00	-0.69	-0.15	-0.02	-0.00	0.00	-0.01	-0.13	0.62
B1	19.0842	0.049				1.00	0.06	-0.00	0.01	-0.01	0.01	-0.03	-0.23
B2	8.86287	0.035					1.00	-0.00	0.00	-0.00	0.00	0.18	-0.07
K1	0.0116281	4.3e-05						1.00	-0.97	0.92	-0.87	-0.01	-0.02
K2	0.0285143	0.00031							1.00	-0.99	0.96	0.01	-0.00
K3	0.00279537	0.00087								1.00	-0.99	-0.01	0.01
K4	-0.0513449	0.00084									1.00	0.00	-0.01
P1	3.0502e-05	3.3e-06										1.00	-0.21
P2	-0.00323316	2.1e-06											1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

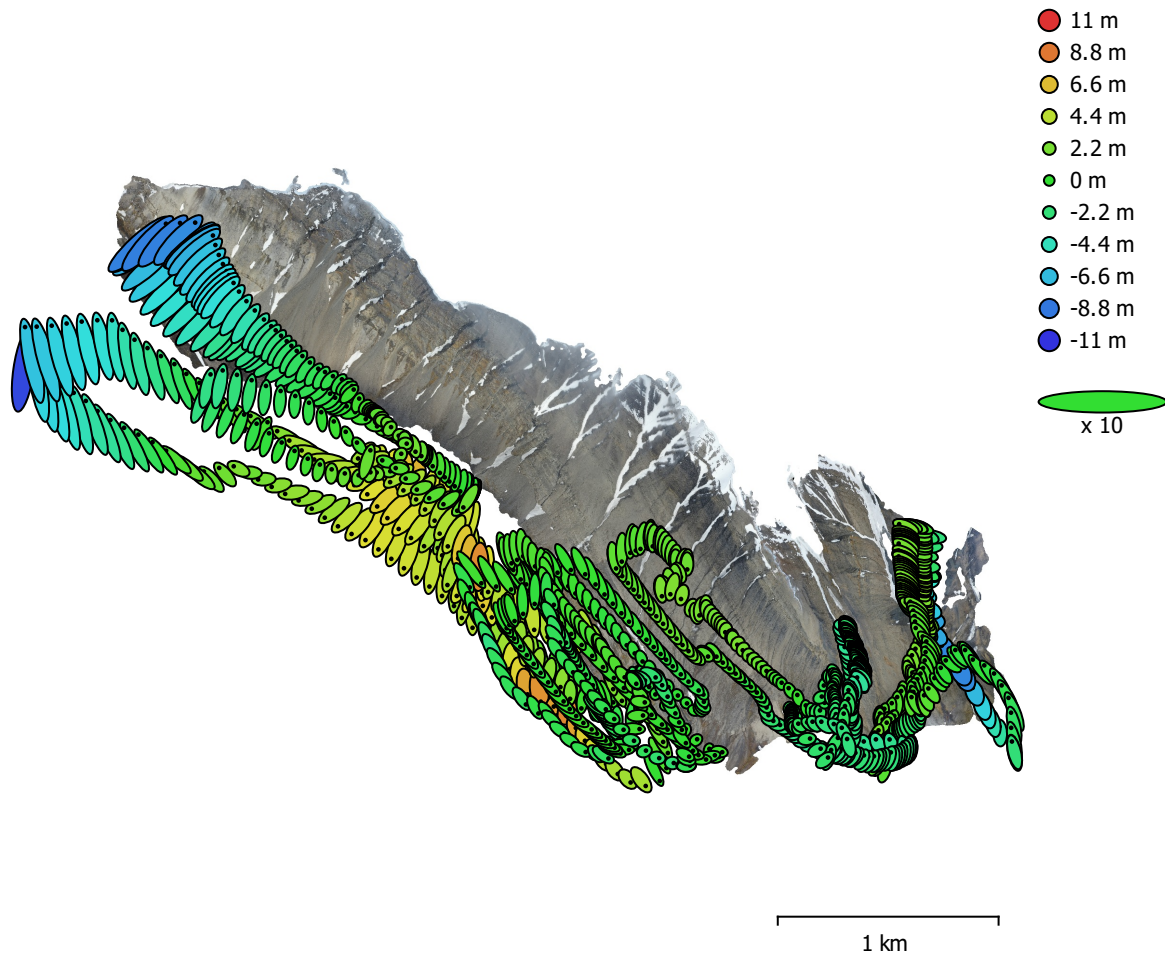


Fig. 3. Camera locations and error estimates.

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)
4.67049	7.45978	2.51764	8.80124	9.15425

Table 3. Average camera location error.

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

Digital Elevation Model

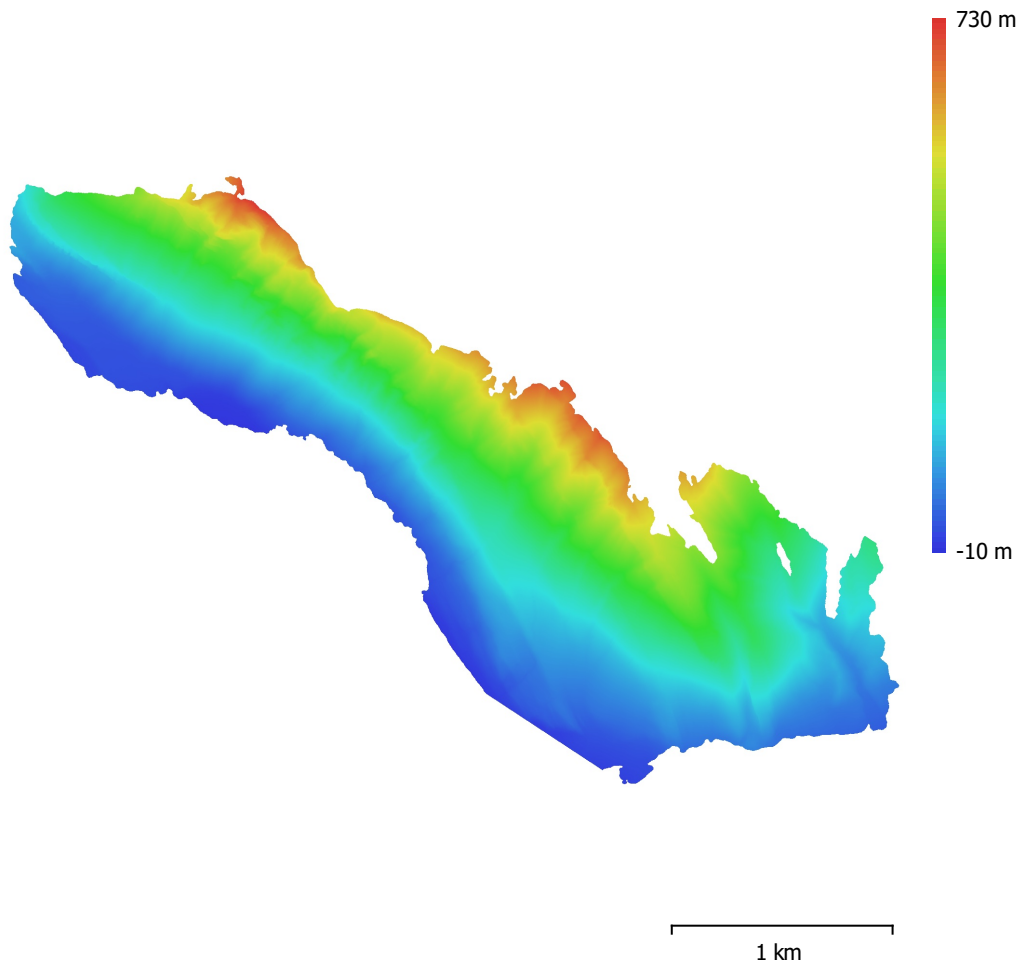


Fig. 4. Reconstructed digital elevation model.

Resolution: 35.6 cm/pix
Point density: 7.9 points/m²

Processing Parameters

General

Cameras	1095
Aligned cameras	1095
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	272,270 of 426,624
RMS reprojection error	0.452873 (0.873507 pix)
Max reprojection error	3.13942 (48.5004 pix)
Mean key point size	1.55996 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	14.9367

Alignment parameters

Accuracy	Highest
Generic preselection	No
Reference preselection	No
Key point limit	40,000
Tie point limit	4,000
Exclude stationary tie points	No
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	23 hours 17 minutes
Matching memory usage	3.90 GB
Alignment time	50 minutes 3 seconds
Alignment memory usage	868.42 MB

Optimization parameters

Parameters	f, b1, b2, cx, cy, k1-k4, p1, p2
Adaptive camera model fitting	No
Optimization time	37 seconds
Software version	1.7.2.12040
File size	104.83 MB

Depth Maps

Count	1068
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Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	1 hours 30 minutes
Memory usage	1.45 GB
Software version	1.7.2.12040
File size	1.87 GB

Dense Point Cloud

Points	43,131,705
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Processing time	1 hours 30 minutes
Memory usage	1.45 GB

Dense cloud generation parameters

Processing time	2 hours 32 minutes
Memory usage	13.59 GB
Software version	1.7.2.12040
File size	924.37 MB
Model	
Faces	2,866,680
Vertices	1,439,734
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096 x 10, 4 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	1 hours 30 minutes
Memory usage	1.45 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	15 minutes 38 seconds
Memory usage	22.10 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	4 minutes 14 seconds
UV mapping memory usage	3.93 GB
Blending time	58 minutes 49 seconds
Blending memory usage	5.58 GB
Software version	1.7.2.12040
File size	363.87 MB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	1 hours 30 minutes
Memory usage	1.45 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	Medium
Enable ghosting filter	No
Processing time	6 hours 47 minutes
Memory usage	4.40 GB
Software version	1.7.2.12040
File size	939.40 MB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.2 build 12040
OS	Windows 64 bit
RAM	127.71 GB
CPU	Intel(R) Xeon(R) Gold 5122 CPU @ 3.60GHz
GPU(s)	Quadro P5000