

Agisoft Metashape

Processing Report

03 August 2021



Survey Data

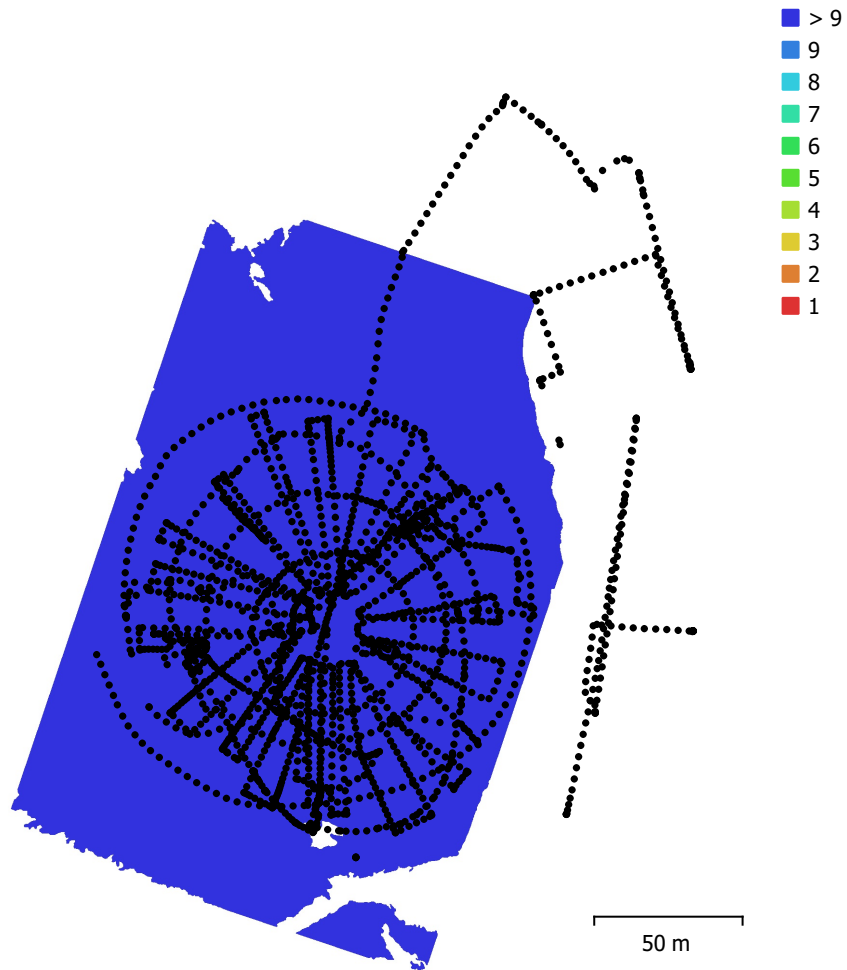


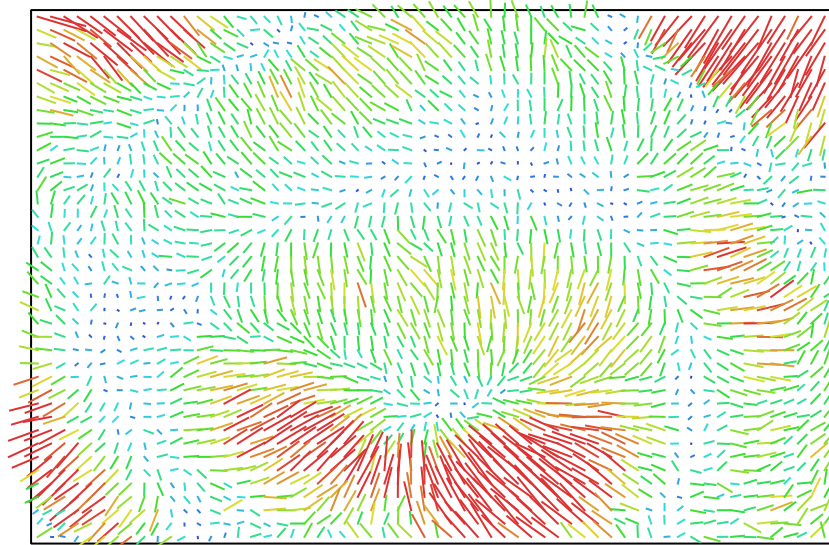
Fig. 1. Camera locations and image overlap.

Number of images:	2,307	Camera stations:	2,307
Flying altitude:	35.3 m	Tie points:	447,816
Ground resolution:	7.15 mm/pix	Projections:	5,061,124
Coverage area:	0.0309 km ²	Reprojection error:	0.959 pix

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

Table 1. Cameras.

Camera Calibration



1 pix

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

L1D-20c (10.26mm)

2307 images

Type	Resolution	Focal Length	Pixel Size
Frame	5472 x 3648	10.26 mm	2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	B1	B2	K1	K2	K3	K4	P1	P2
F	4338.96	0.028	1.00	-0.05	0.11	-0.71	-0.01	-0.17	0.16	-0.15	0.14	-0.05	-0.00
Cx	25.3468	0.03		1.00	-0.03	0.07	0.64	-0.01	0.01	-0.01	0.01	0.87	0.01
Cy	-39.2512	0.043			1.00	-0.70	-0.04	0.00	-0.01	0.01	-0.01	0.01	0.49
B1	-5.05859	0.028				1.00	0.07	-0.03	0.02	-0.02	0.01	0.04	-0.19
B2	3.85027	0.017					1.00	-0.02	0.01	-0.01	0.01	0.25	0.05
K1	0.0047296	2.8e-05						1.00	-0.97	0.92	-0.87	0.00	-0.05
K2	-0.00939304	0.00019							1.00	-0.99	0.95	0.00	0.01
K3	0.0396416	0.00051								1.00	-0.99	-0.00	-0.00
K4	-0.0525739	0.00046									1.00	0.00	-0.00
P1	0.00161408	1.9e-06										1.00	-0.01
P2	-0.00272717	1.3e-06											1.00

Table 2. Calibration coefficients and correlation matrix.

Ground Control Points

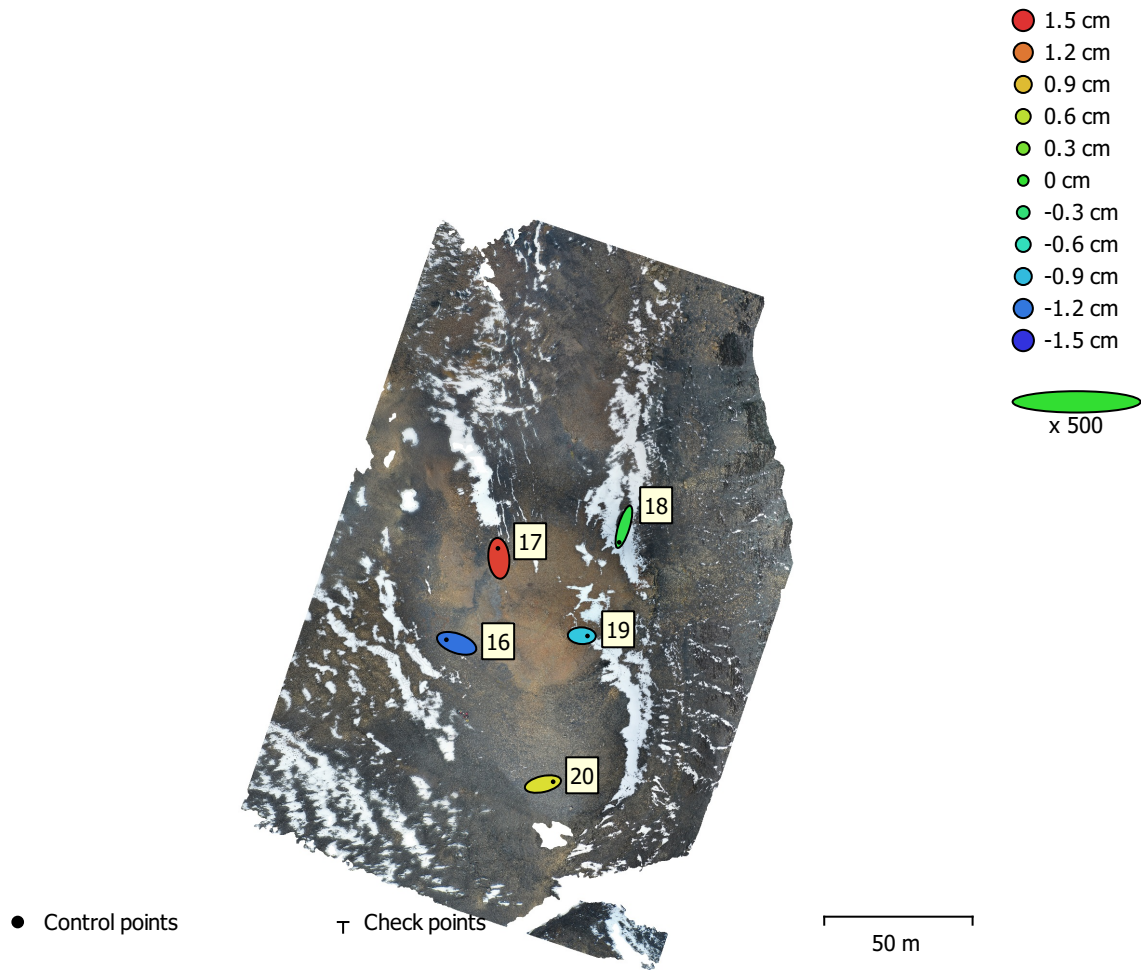


Fig. 3. GCP locations and error estimates.

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

Estimated GCP locations are marked with a dot or crossing.

Count	X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
5	0.98045	1.14377	0.984762	1.50648	1.79979

Table 3. Control points RMSE.

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

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
16	-1.38135	0.484769	-1.22222	1.90708	1.880 (80)
20	1.3772	0.310515	0.738678	1.59335	2.519 (71)
18	-0.636493	-2.09975	-0.109595	2.19684	2.120 (96)
19	0.762605	-0.0369612	-0.848293	1.14129	2.390 (66)
17	-0.122033	1.34139	1.44143	1.9728	1.306 (28)
Total	0.98045	1.14377	0.984762	1.79979	2.159

Table 4. Control points.
X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

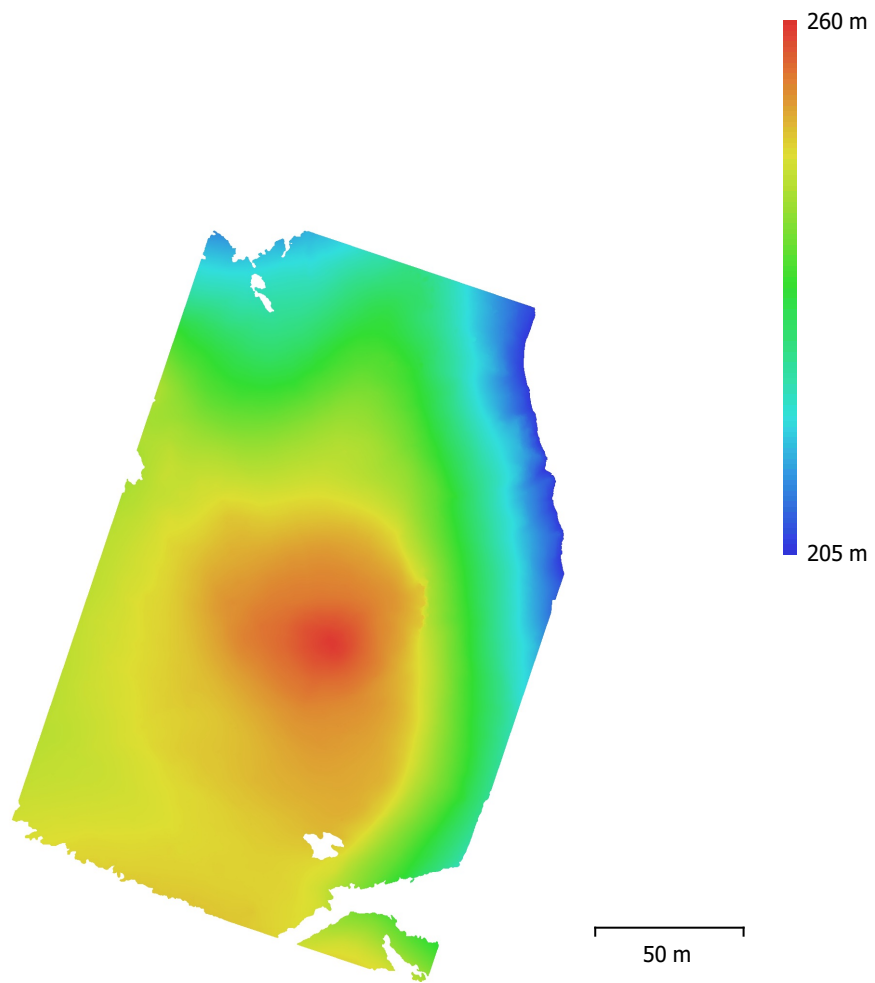


Fig. 4. Reconstructed digital elevation model.

Resolution: 1.43 cm/pix
Point density: 0.489 points/cm²

Processing Parameters

General

Cameras	2307
Aligned cameras	2307
Markers	5
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	447,816 of 732,809
RMS reprojection error	0.369543 (0.959307 pix)
Max reprojection error	1.18406 (51.3288 pix)
Mean key point size	2.29014 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	18.6733

Alignment parameters

Accuracy	Highest
Generic preselection	Yes
Reference preselection	Source
Key point limit	40,000
Tie point limit	4,000
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	8 minutes 11 seconds
Matching memory usage	3.03 GB
Alignment time	26 minutes 53 seconds
Alignment memory usage	5.79 GB
Software version	1.7.2.12040
File size	221.45 MB

Depth Maps

Count	2305
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Depth maps generation parameters

Quality	High
Filtering mode	Mild
Max neighbors	100
Processing time	0 seconds
Memory usage	11.00 GB
Software version	1.7.2.12040
File size	16.69 GB

Dense Point Cloud

Points	145,233,030
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Mild
Max neighbors	100
Processing time	0 seconds
Memory usage	11.00 GB

Dense cloud generation parameters

Processing time	3 minutes 4 seconds
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Memory usage	93.08 GB
Software version	1.7.2.12040
File size	3.56 GB
Model	
Faces	29,046,601
Vertices	14,537,334
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
Max neighbors	100
Processing time	0 seconds
Memory usage	11.00 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	1 hours 9 minutes
Memory usage	79.56 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 18 seconds
UV mapping memory usage	5.89 GB
Blending time	2 hours 20 minutes
Blending memory usage	11.11 GB
Software version	1.7.2.12040
File size	1.43 GB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	100
Processing time	0 seconds
Memory usage	11.00 GB
Reconstruction parameters	
Source data	Dense cloud
Tile size	256
Face count	Low
Enable ghosting filter	No
Processing time	9 hours 14 minutes
Memory usage	3.67 GB
Software version	1.7.2.12040
File size	583.55 MB
System	
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) i9-9900K CPU @ 3.60GHz

GPU(s)

GeForce RTX 2080