

Agisoft Metashape

Processing Report

Rec Unc: 10.1

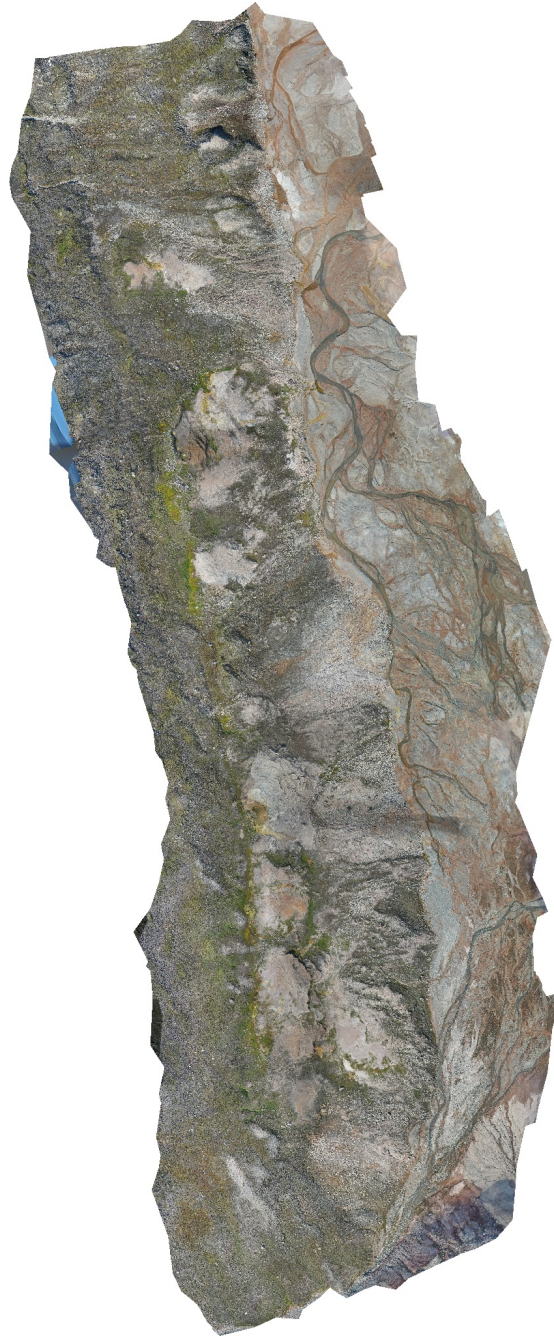
Proj Acc: 2.5

Rep Err: 0.3

PcConf: 5

MeshCC: 99%

21 May 2024



Survey Data

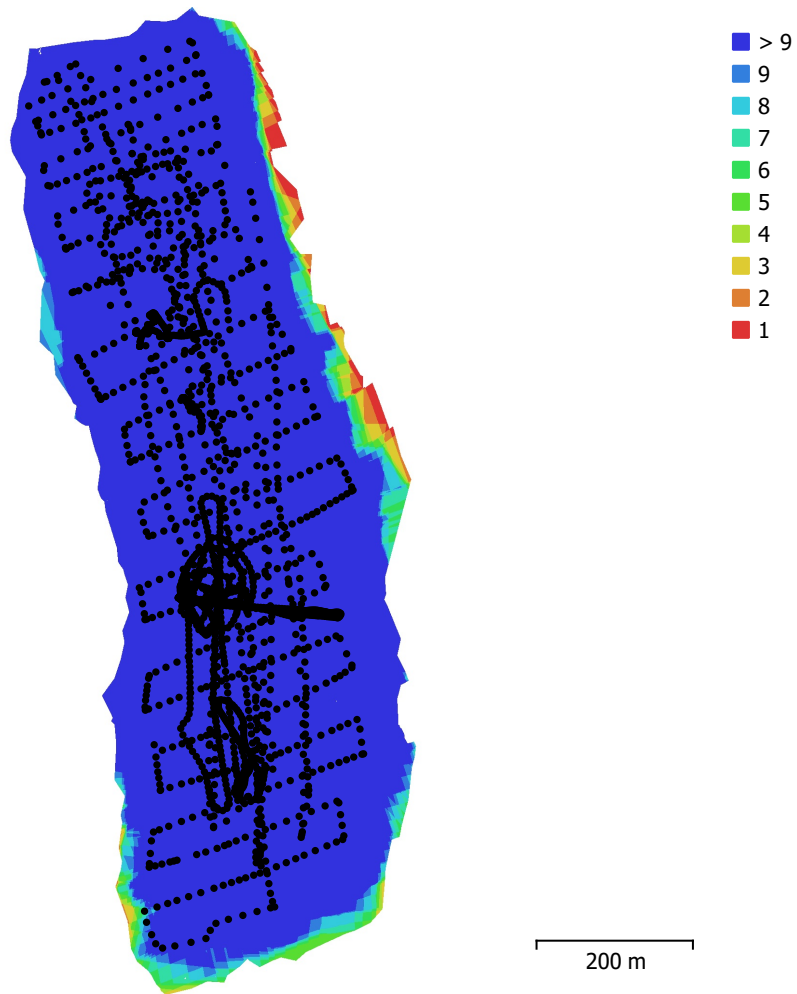


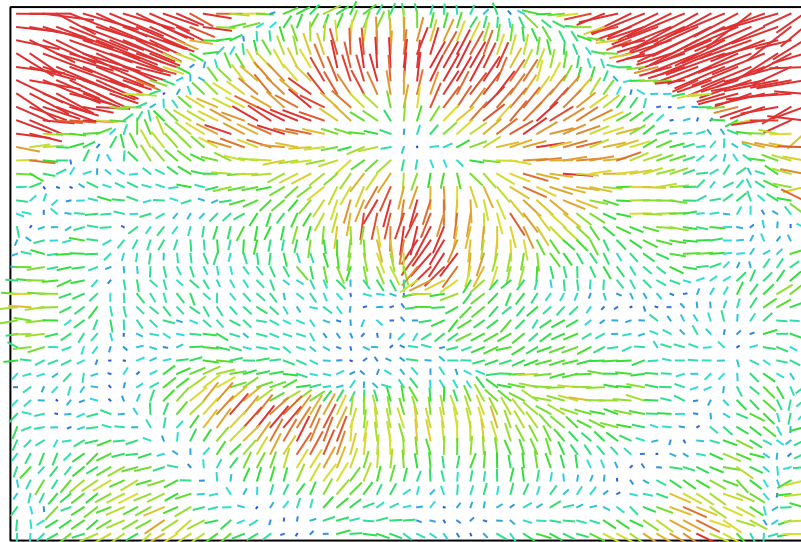
Fig. 1. Camera locations and image overlap.

Number of images:	2,031	Camera stations:	1,976
Flying altitude:	69.5 m	Tie points:	2,385,309
Ground resolution:	1.68 cm/pix	Projections:	7,030,288
Coverage area:	0.421 km ²	Reprojection error:	0.293 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Test_Pro (10.26mm)	5472 x 3648	10.26 mm	2.41 x 2.41 μm	No
Test_Pro (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 Test_Pro (10.26mm).

Test_Pro (10.26mm)

667 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	K1	K2	K3	P1	P2
F	4446.77	0.077	1.00	-0.08	-0.88	0.06	0.07	-0.08	-0.00	-0.38
Cx	8.59033	0.014		1.00	0.11	-0.03	0.00	-0.00	0.82	0.11
Cy	-112.493	0.036			1.00	-0.16	-0.01	0.04	0.05	0.69
K1	-0.000878849	1.4e-05				1.00	-0.93	0.87	-0.03	-0.25
K2	0.0245744	5.9e-05					1.00	-0.98	0.00	0.03
K3	-0.0352393	7.5e-05						1.00	0.00	-0.01
P1	0.000343175	9.6e-07							1.00	0.12
P2	-0.0028893	1.5e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

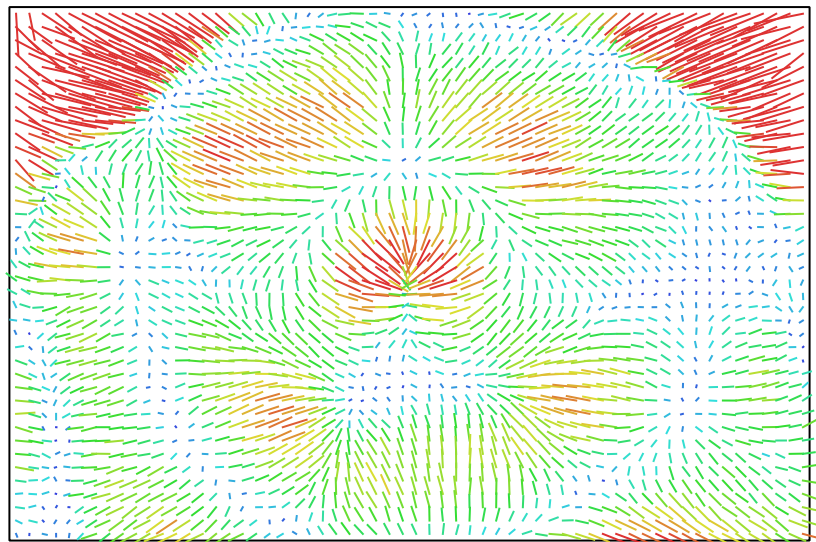


Fig. 3. Image residuals for Test_Pro (10.26mm).

Test_Pro (10.26mm)

1364 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	K1	K2	K3	P1	P2
F	4397.44	0.042	1.00	-0.01	-0.79	0.01	0.08	-0.08	-0.02	-0.28
Cx	-14.1896	0.017		1.00	0.01	-0.02	0.01	-0.00	0.78	0.03
Cy	-76.1353	0.036			1.00	-0.14	-0.00	0.02	0.03	0.67
K1	0.0139354	1.3e-05				1.00	-0.93	0.87	-0.02	-0.21
K2	0.0267455	5.6e-05					1.00	-0.98	0.00	0.02
K3	-0.0291163	7.4e-05						1.00	-0.00	0.00
P1	-0.000545691	1.1e-06							1.00	0.04
P2	-0.00278768	1.9e-06								1.00

Table 3. Calibration coefficients and correlation matrix.

Camera Locations

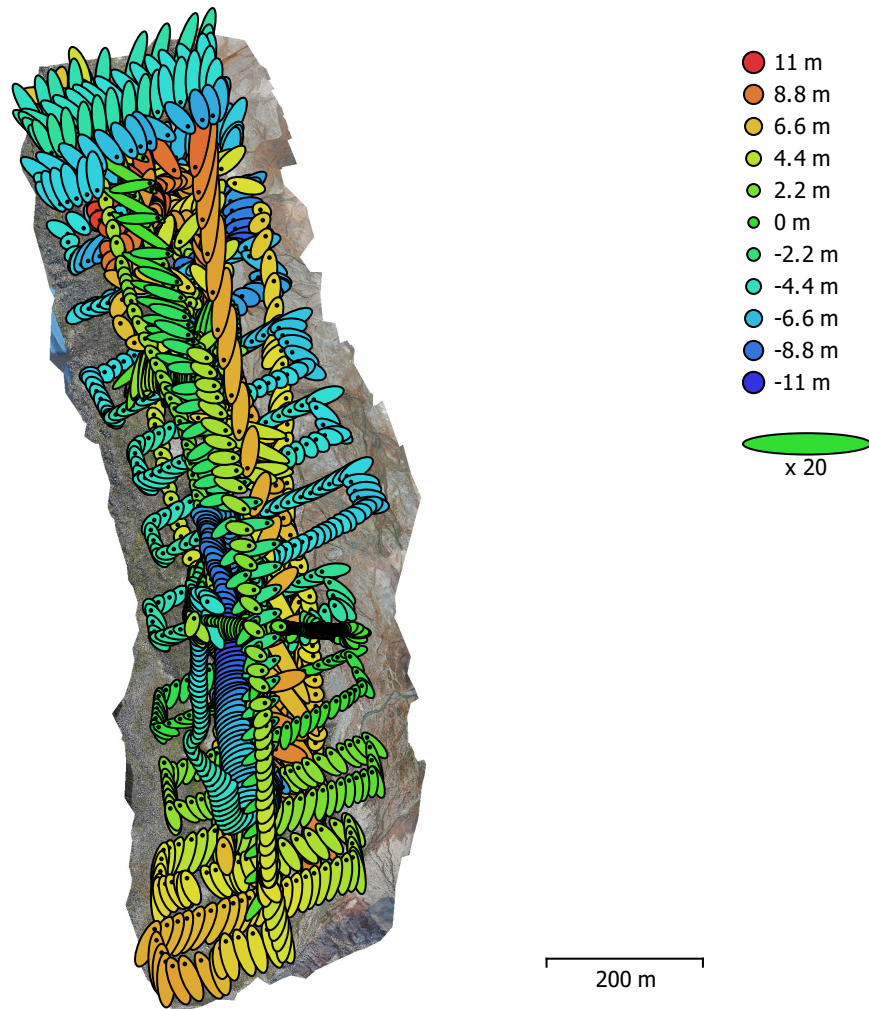


Fig. 4. Camera locations and error estimates.

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)
0.811123	1.2946	4.80048	1.52772	5.03771

Table 4. Average camera location error.
X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

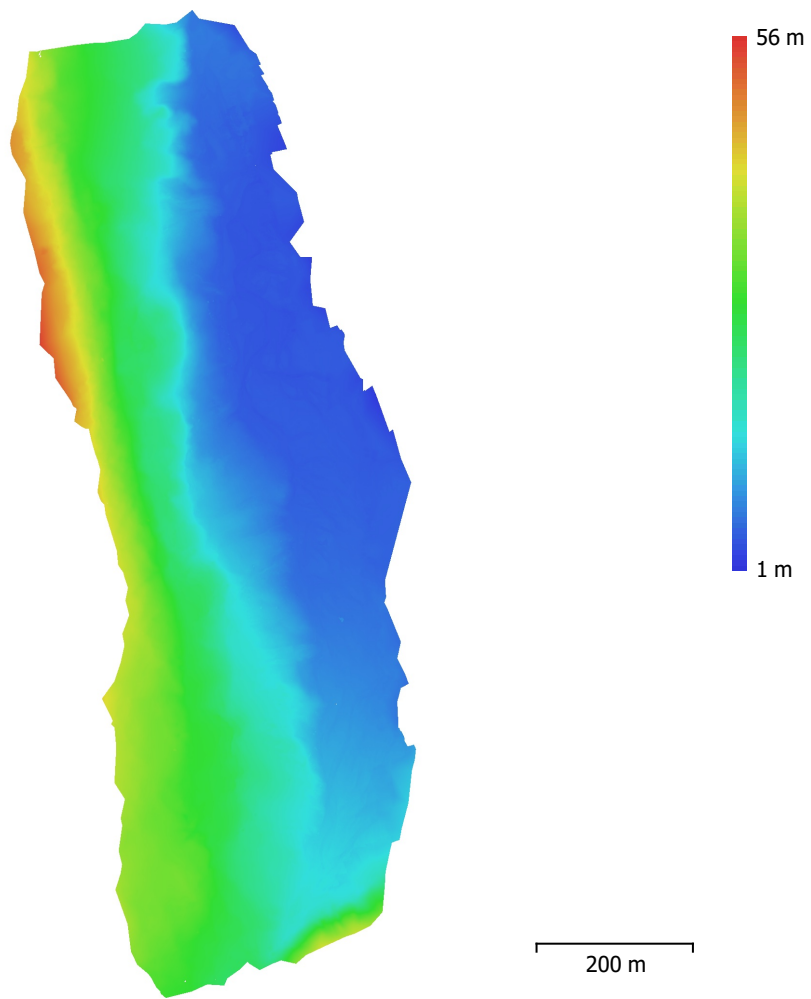


Fig. 5. Reconstructed digital elevation model.

Resolution: 6.7 cm/pix
Point density: 223 points/m²

Processing Parameters

General

Cameras	2031
Aligned cameras	1976
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	2,385,309 of 14,462,906
RMS reprojection error	0.135504 (0.293471 pix)
Max reprojection error	1.0244 (7.30447 pix)
Mean key point size	2.14985 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.73214

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	60,000
Key point limit per Mpx	1,000
Tie point limit	0
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	1 hours 29 minutes
Matching memory usage	4.40 GB
Alignment time	5 hours 43 minutes
Alignment memory usage	5.45 GB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	2 minutes 48 seconds
Date created	2023:07:27 20:00:55
Software version	2.0.2.16334
File size	919.87 MB

Depth Maps

Count	1944
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Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Max neighbors	16
Processing time	27 minutes 26 seconds
Memory usage	1.87 GB
Date created	2023:10:17 10:37:07
Software version	2.0.2.16334
File size	3.53 GB

Point Cloud

Points	72,529,511
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Point attributes

Color	3 bands, uint8
Normal	

Confidence	6 - 152
Point classes	
Created (never classified)	72,529,511
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Max neighbors	16
Processing time	27 minutes 26 seconds
Memory usage	1.87 GB
Point cloud generation parameters	
Processing time	2 hours 52 minutes
Memory usage	13.77 GB
Date created	2023:10:17 13:29:35
Software version	2.0.2.16334
File size	1.97 GB
Model	
Faces	1,000,000
Vertices	500,112
Vertex colors	3 bands, uint8
Texture	8,192 x 8,192 x 10, 4 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Max neighbors	16
Processing time	27 minutes 26 seconds
Memory usage	1.87 GB
Point cloud generation parameters	
Processing time	2 hours 52 minutes
Memory usage	13.77 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Point cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	11 minutes 7 seconds
Memory usage	6.93 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	8,192
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	51 seconds
UV mapping memory usage	1.07 GB
Blending time	51 minutes 33 seconds
Blending memory usage	49.81 GB
Date created	2023:10:17 13:53:17
Software version	2.0.2.16334
File size	1.13 GB
System	
Software name	Agisoft Metashape Professional
Software version	2.1.0 build 17532
OS	Windows 64 bit
RAM	127.78 GB
CPU	Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz
GPU(s)	GeForce RTX 2080