

Agisoft Metashape

Processing Report

24 June 2024



Survey Data

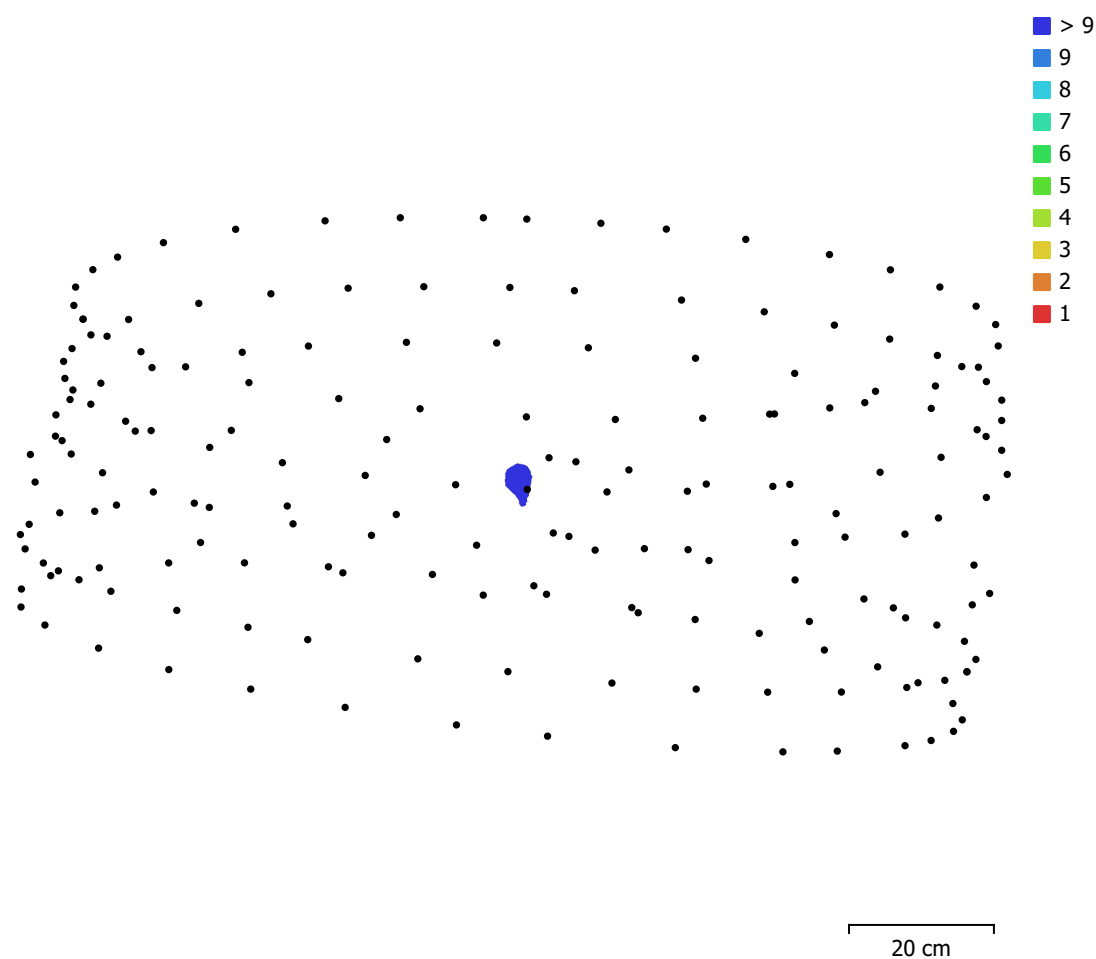


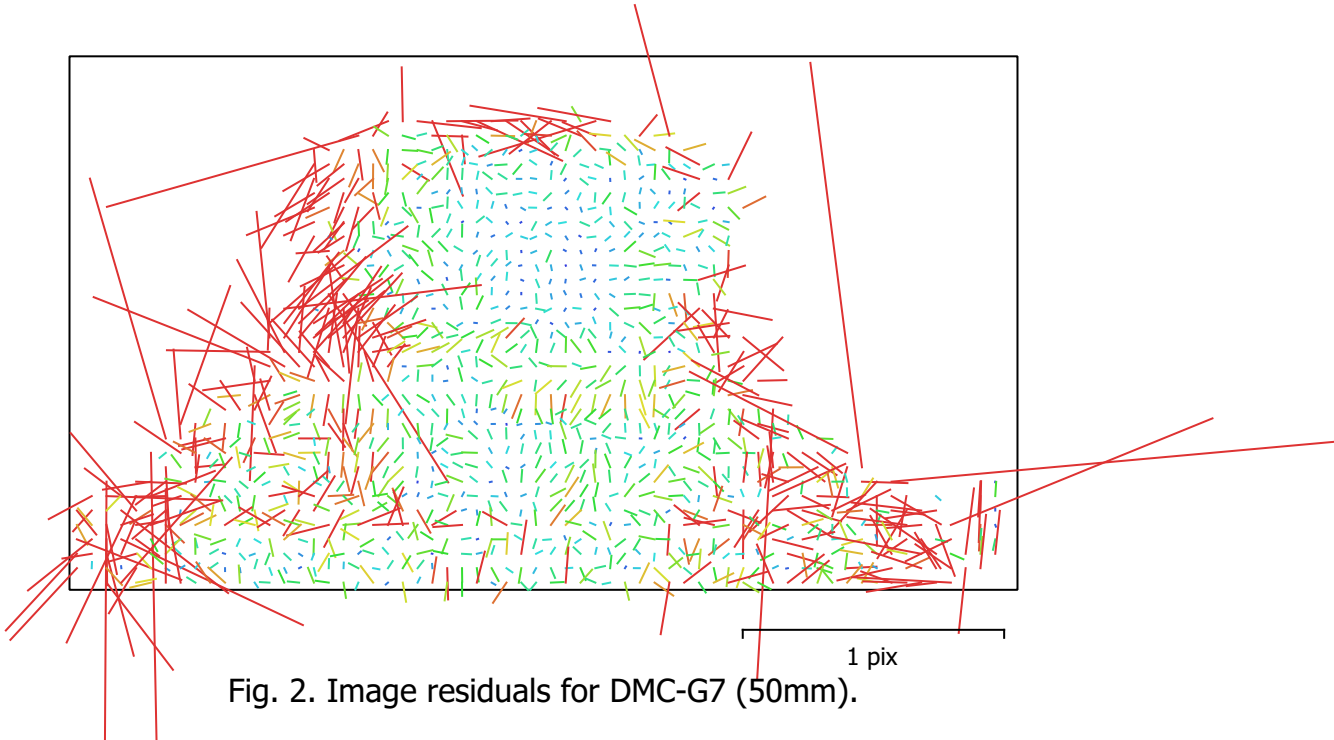
Fig. 1. Camera locations and image overlap.

Number of images:	190	Camera stations:	190
Flying altitude:	65.3 cm	Tie points:	184,613
Ground resolution:	0.0468 mm/pix	Projections:	754,249
Coverage area:	15 cm ²	Reprojection error:	0.78 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
DMC-G7 (50mm)	4592 x 2584	50 mm	3.8 x 3.8 μm	No
DMC-G7 (50mm)	4592 x 2584	50 mm	3.8 x 3.8 μm	No

Table 1. Cameras.

Camera Calibration



DMC-G7 (50mm)

102 images

Type	Resolution	Focal Length	Pixel Size
Frame	4592 x 2584	50 mm	3.8 x 3.8 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	13794.2	3.5	1.00	0.00	-0.40	-0.16	0.20	-0.17	-0.02	-0.31
Cx	112.489	6.2		1.00	-0.09	-0.01	0.19	-0.26	0.97	-0.09
Cy	-159.833	8.8			1.00	0.14	-0.38	0.42	-0.05	0.93
K1	0.170208	0.0029				1.00	-0.84	0.72	0.03	0.04
K2	-7.15547	0.23					1.00	-0.97	0.17	-0.37
K3	118.408	4.9						1.00	-0.24	0.42
P1	0.00249748	0.00017							1.00	-0.06
P2	-0.0064627	0.00021								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

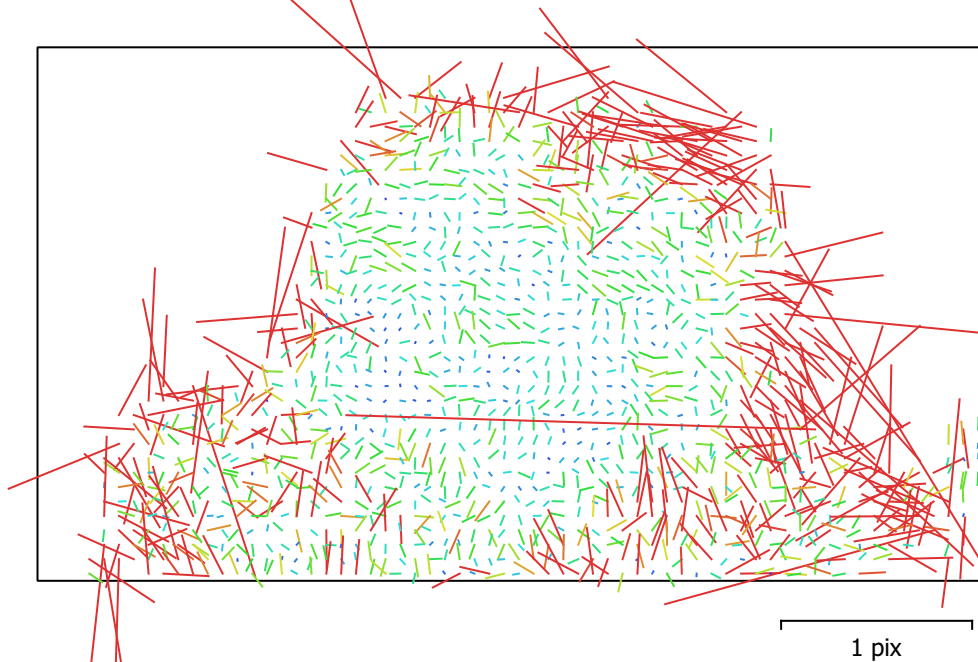


Fig. 3. Image residuals for DMC-G7 (50mm).

DMC-G7 (50mm)

88 images

Type	Resolution	Focal Length	Pixel Size
Frame	4592 x 2584	50 mm	3.8 x 3.8 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	14113.1	5	1.00	-0.00	-0.48	-0.07	-0.30	0.35	-0.14	0.14
Cx	142.197	5		1.00	-0.01	0.13	-0.13	0.10	0.90	-0.01
Cy	-831.21	11			1.00	-0.22	0.60	-0.63	0.13	0.43
K1	-0.25477	0.0059				1.00	-0.78	0.67	0.17	-0.43
K2	9.72888	0.33					1.00	-0.98	-0.05	0.21
K3	-93.6723	5.5						1.00	0.00	-0.16
P1	0.0023933	0.00013							1.00	-0.10
P2	-0.00822872	0.00026								1.00

Table 3. Calibration coefficients and correlation matrix.

Scale Bars

Label	Distance (m)	Error (m)
target 19_target 20	0.05	4.30211e-16
Total		4.30211e-16

Table 4. Control scale bars.

Digital Elevation Model

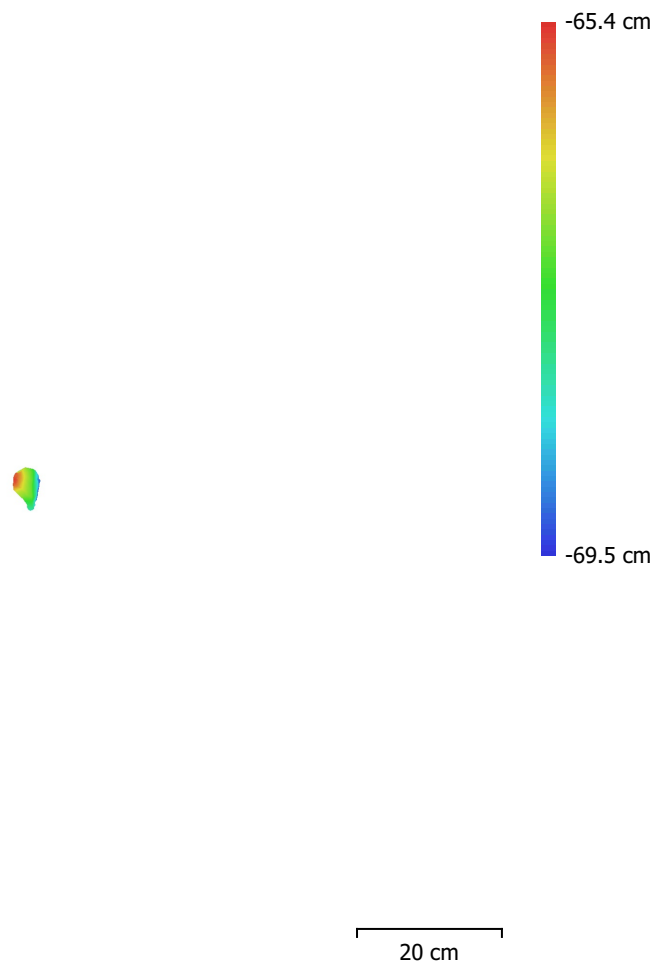


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.269 mm/pix
Point density: 13.8 points/mm²

Processing Parameters

General

Cameras	190
Aligned cameras	190
Markers	4
Scale bars	1
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	184,613 of 228,816
RMS reprojection error	0.230541 (0.780477 pix)
Max reprojection error	0.716645 (35.4474 pix)
Mean key point size	3.00863 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	4.91494
File size	22.07 MB

Depth Maps

Count	190
Depth maps generation parameters	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	4 minutes 13 seconds
Memory usage	2.62 GB
Date created	2024:06:14 18:08:27
Software version	1.8.4.14671
File size	39.55 MB

Model

Faces	47,890
Vertices	23,947
Vertex colors	3 bands, uint8
Texture	16,000 x 16,000 x 2, 4 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	4 minutes 13 seconds
Memory usage	2.62 GB

Reconstruction parameters

Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	30 seconds
Memory usage	2.85 GB

Texturing parameters

Mapping mode	Generic
Blending mode	Mosaic
Texture size	16,000
Enable hole filling	Yes

Enable ghosting filter	Yes
UV mapping time	5 seconds
UV mapping memory usage	810.91 MB
Blending time	1 minutes 23 seconds
Blending memory usage	14.35 GB
Blending GPU memory usage	11.89 GB
Date created	2024:06:14 18:08:57
Software version	1.8.4.14671
File size	134.77 MB

System

Software name	Agisoft Metashape Professional
Software version	1.8.4 build 14671
OS	Windows 64 bit
RAM	127.71 GB
CPU	Intel(R) Core(TM) i9-10940X CPU @ 3.30GHz
GPU(s)	Quadro RTX 5000