

Agisoft Metashape

Processing Report

24 June 2024



Survey Data

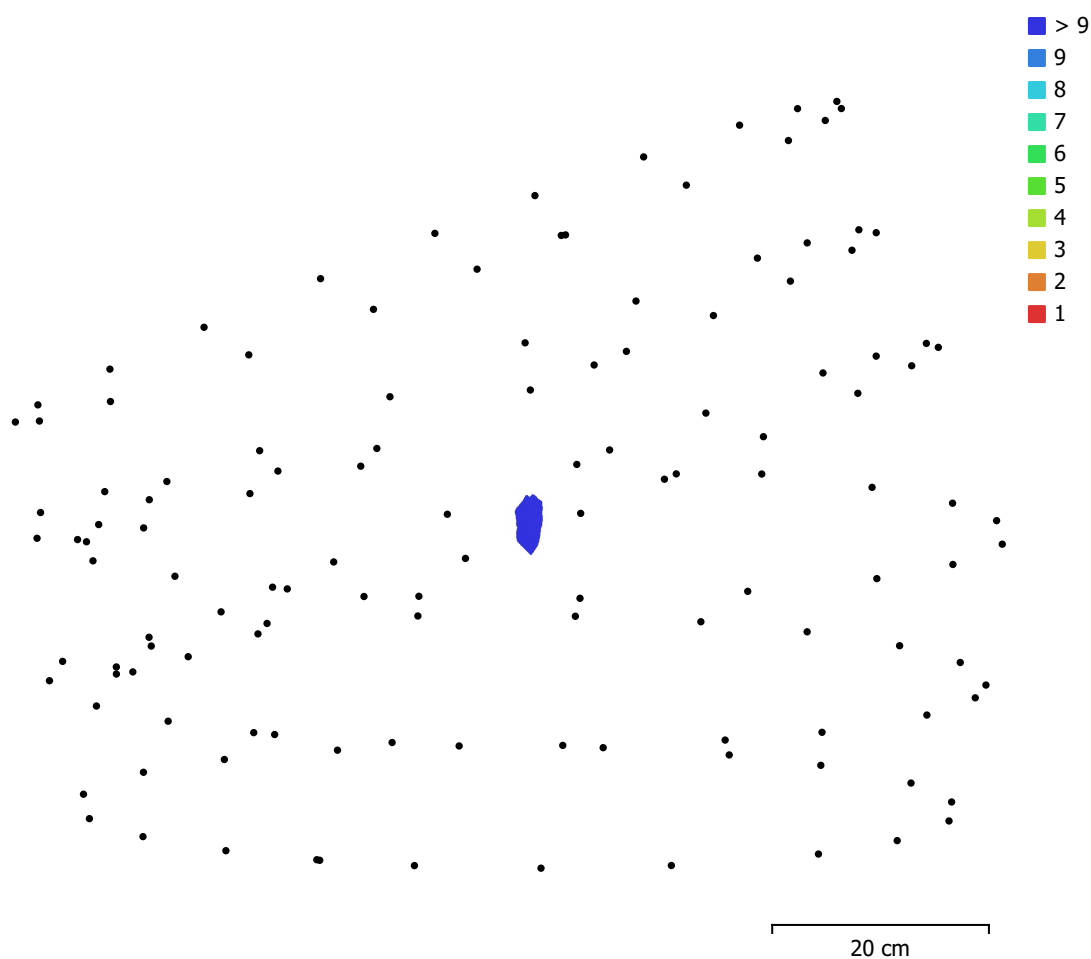


Fig. 1. Camera locations and image overlap.

Number of images:	129	Camera stations:	129
Flying altitude:	43.5 cm	Tie points:	110,854
Ground resolution:	0.043 mm/pix	Projections:	338,625
Coverage area:	10.7 cm ²	Reprojection error:	0.981 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
DMC-G7 (38mm)	4592 x 2584	38 mm	3.81 x 3.81 μm	No
DMC-G7 (38mm)	4592 x 2584	38 mm	3.81 x 3.81 μm	No

Table 1. Cameras.

Camera Calibration

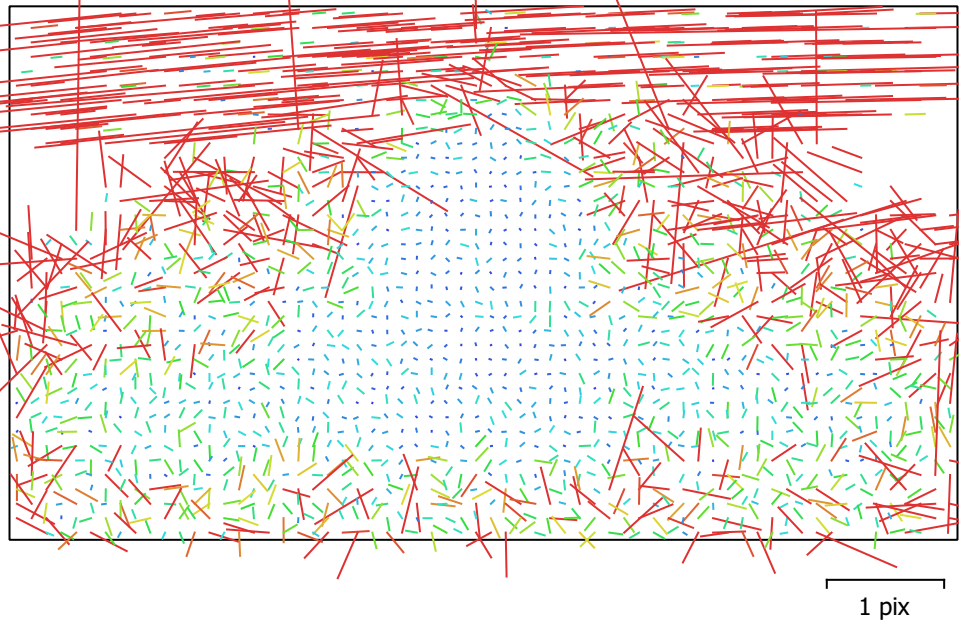


Fig. 2. Image residuals for DMC-G7 (38mm).

DMC-G7 (38mm)

63 images

Type	Resolution	Focal Length	Pixel Size
Frame	4592 x 2584	38 mm	3.81 x 3.81 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	10115.1	1.9	1.00	0.06	-0.57	-0.22	0.21	-0.15	0.05	-0.31
Cx	62.0686	5.6		1.00	0.10	-0.06	0.03	-0.01	0.99	0.05
Cy	-81.1572	4.1			1.00	-0.08	0.01	-0.02	0.11	0.83
K1	0.0218195	0.0039				1.00	-0.92	0.83	-0.05	-0.08
K2	0.599448	0.13					1.00	-0.97	0.02	-0.03
K3	-5.86705	1.4						1.00	-0.00	0.04
P1	0.00407866	0.00021							1.00	0.05
P2	-0.00529041	0.00016								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

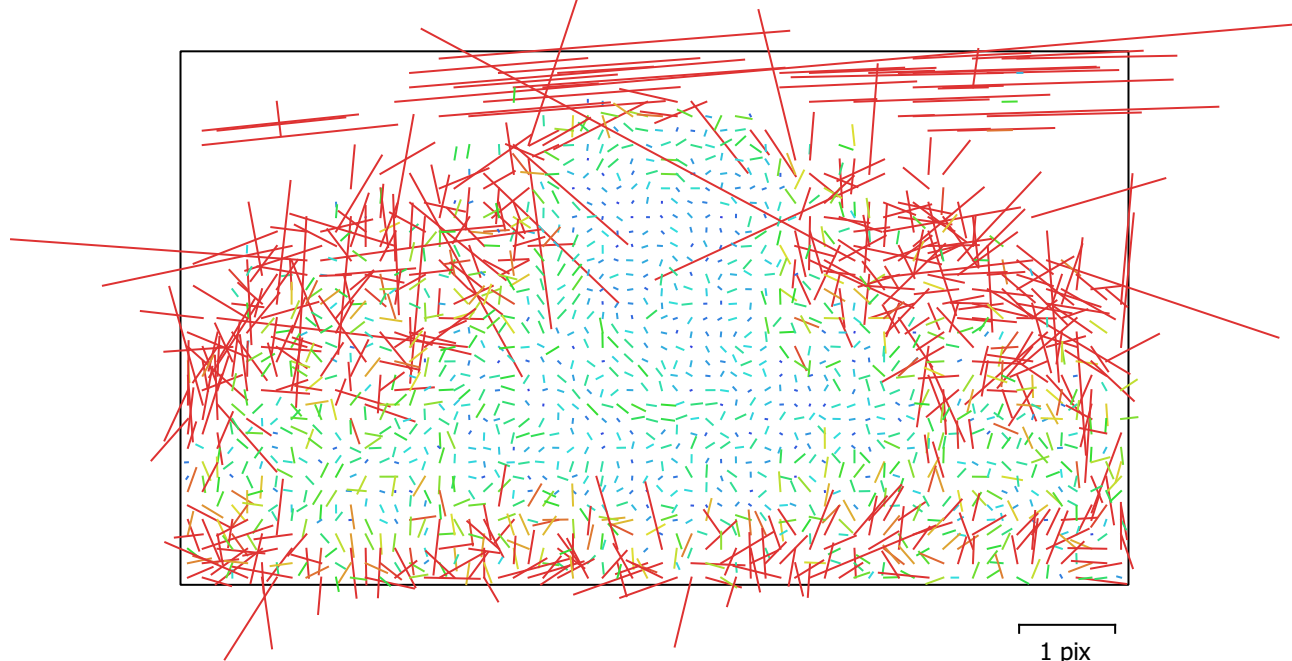


Fig. 3. Image residuals for DMC-G7 (38mm).

DMC-G7 (38mm)

66 images

Type	Resolution	Focal Length	Pixel Size
Frame	4592 x 2584	38 mm	3.81 x 3.81 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	10282	3.4	1.00	0.55	-0.47	-0.18	-0.04	0.17	0.23	0.17
Cx	1109.75	5.1		1.00	0.02	-0.17	-0.16	0.32	0.58	-0.00
Cy	-120.923	4.3			1.00	0.01	0.17	-0.21	0.21	0.04
K1	0.0190489	0.003				1.00	-0.71	0.51	0.52	-0.46
K2	1.02414	0.032					1.00	-0.96	-0.25	0.32
K3	-5.30548	0.16						1.00	0.21	-0.21
P1	0.0445698	0.00022							1.00	-0.25
P2	-0.00243045	0.00011								1.00

Table 3. Calibration coefficients and correlation matrix.

Ground Control Points

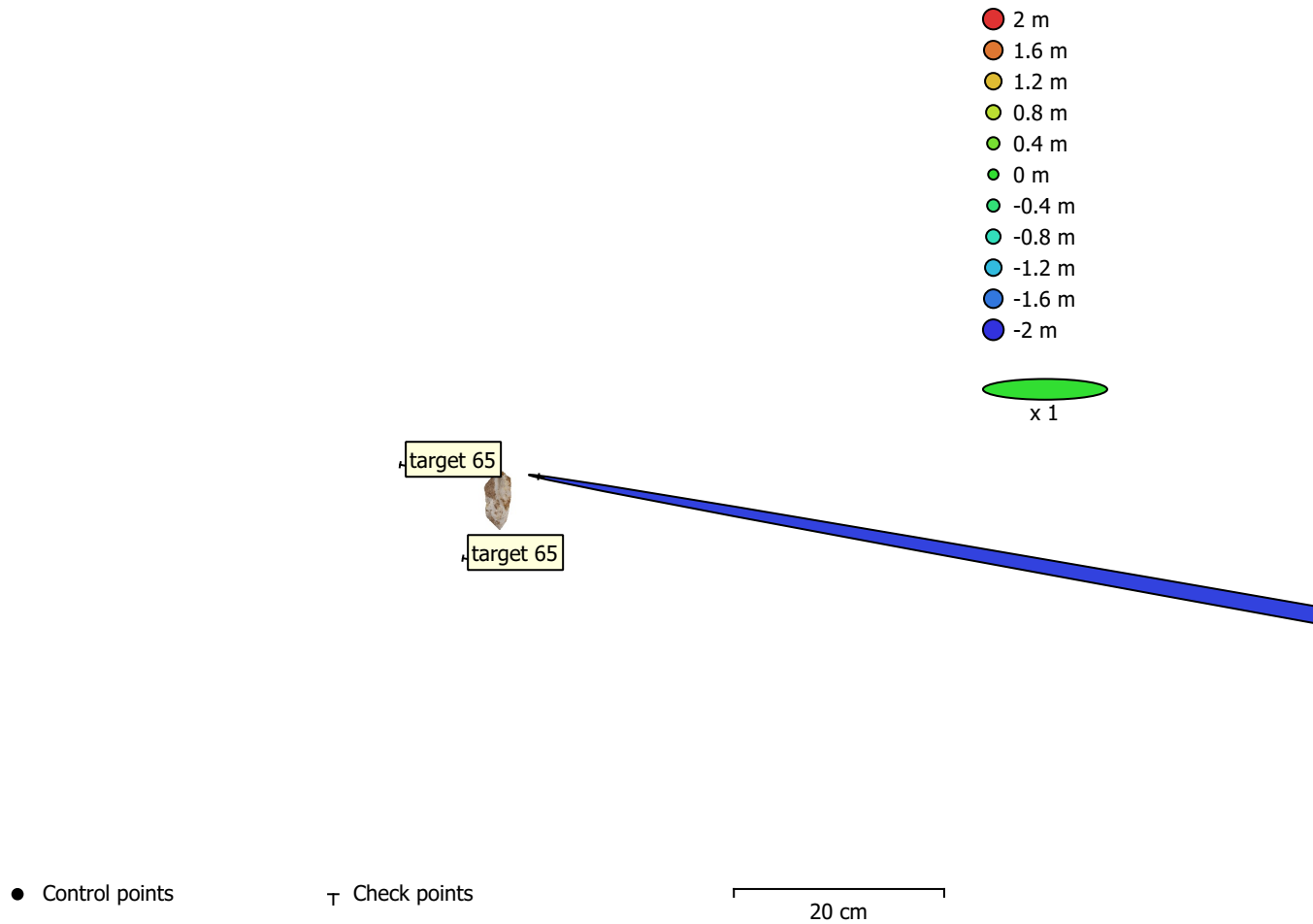


Fig. 4. GCP locations and error estimates.

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 (m)	Y error (m)	Z error (m)	XY error (m)	Total (m)
1	3.27436	0.582343	1.90616	3.32574	3.83327

Table 4. Check points RMSE.

Label	X error (m)	Y error (m)	Z error (m)	Total (m)	Image (pix)
point 1	-3.27436	0.582343	-1.90616	3.83327	0.000 (56)
target 65					0.825 (14)
target 65					1.552 (12)
Total	3.27436	0.582343	1.90616	3.83327	0.000

Table 5. Check points.

Scale Bars

Label	Distance (m)	Error (m)
target 65_point 1	0.15	-1.52336e-12
Total		1.52336e-12

Table 6. Control scale bars.

Digital Elevation Model

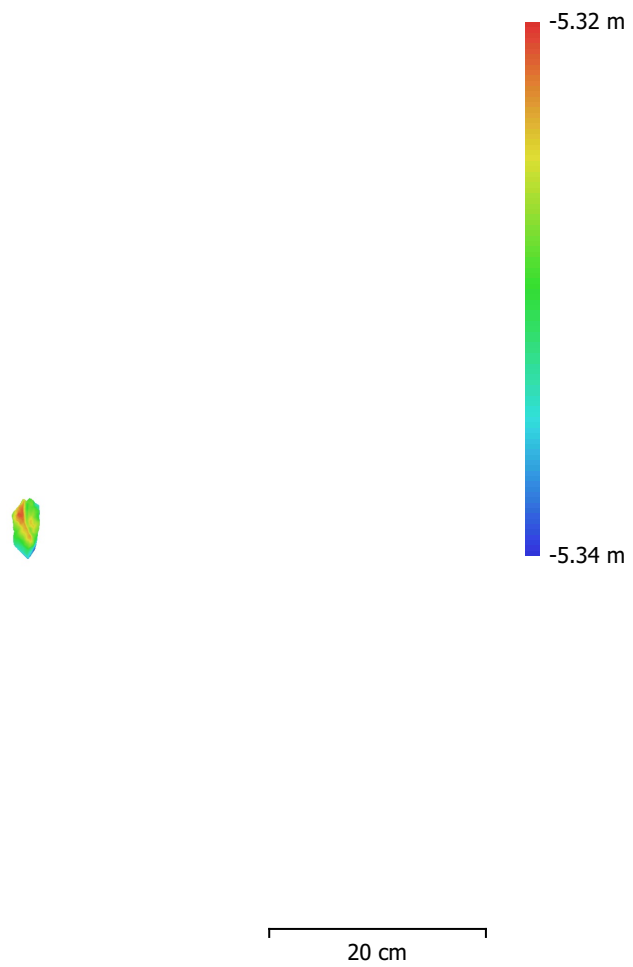


Fig. 5. Reconstructed digital elevation model.

Resolution: 0.0989 mm/pix
Point density: 102 points/mm²

Processing Parameters

General

Cameras	129
Aligned cameras	129
Markers	3
Scale bars	1
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	110,854 of 144,128
RMS reprojection error	0.247069 (0.980644 pix)
Max reprojection error	0.863803 (45.8405 pix)
Mean key point size	3.22911 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.34602
File size	13.99 MB

Depth Maps

Count	129
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Aggressive
Max neighbors	16
Processing time	17 minutes 30 seconds
File size	80.78 MB

Model

Faces	464,672
Vertices	232,338
Vertex colors	3 bands, uint8
Texture	10,000 x 10,000, 4 bands, uint8

Texturing parameters

Mapping mode	Generic
Blending mode	Mosaic
Texture size	10,000
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	31 seconds
UV mapping memory usage	362.25 MB
Blending time	40 seconds
Blending memory usage	3.60 GB
Blending GPU memory usage	2.65 GB
File size	68.01 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