

Agisoft Metashape

Processing Report

24 June 2024



Survey Data

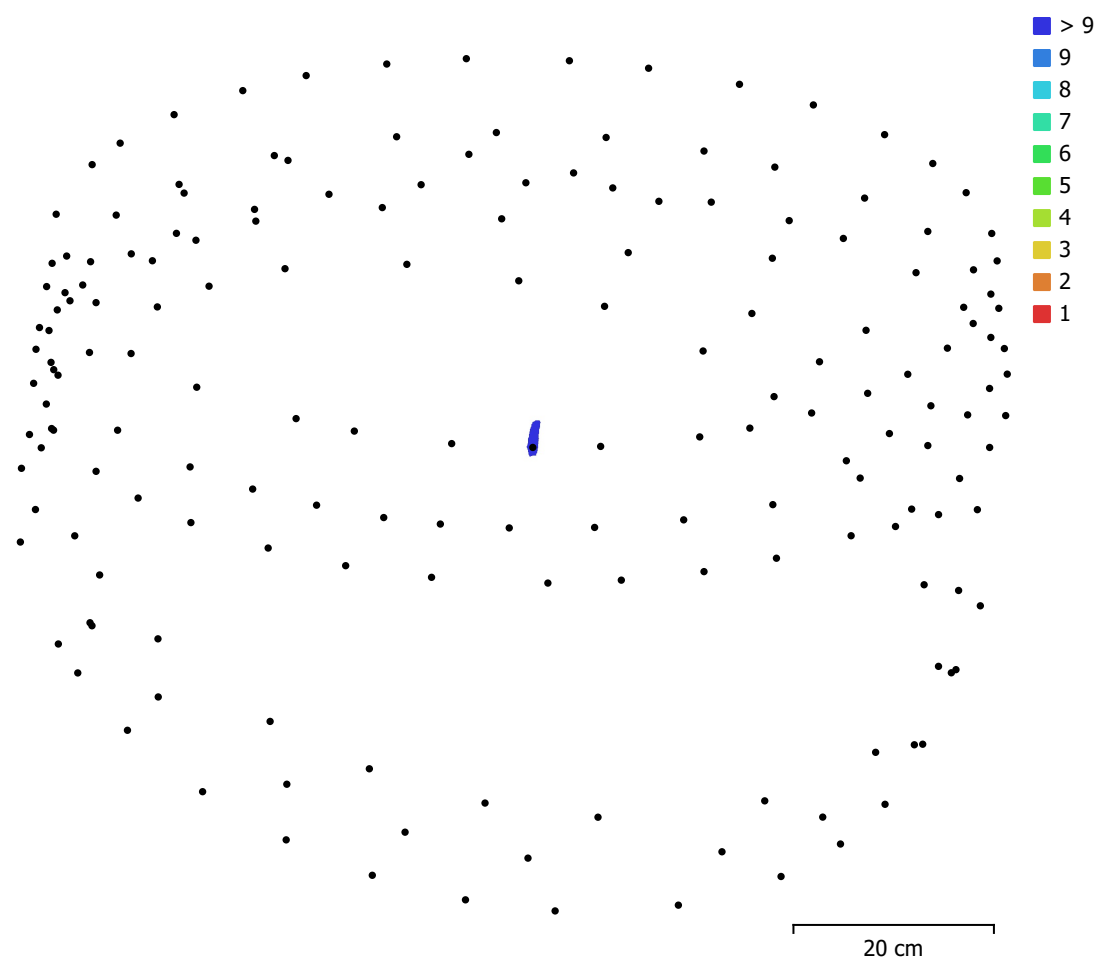


Fig. 1. Camera locations and image overlap.

Number of images:	179	Camera stations:	179
Flying altitude:	47.9 cm	Tie points:	216,218
Ground resolution:	0.0456 mm/pix	Projections:	665,622
Coverage area:	3.31 cm ²	Reprojection error:	0.715 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

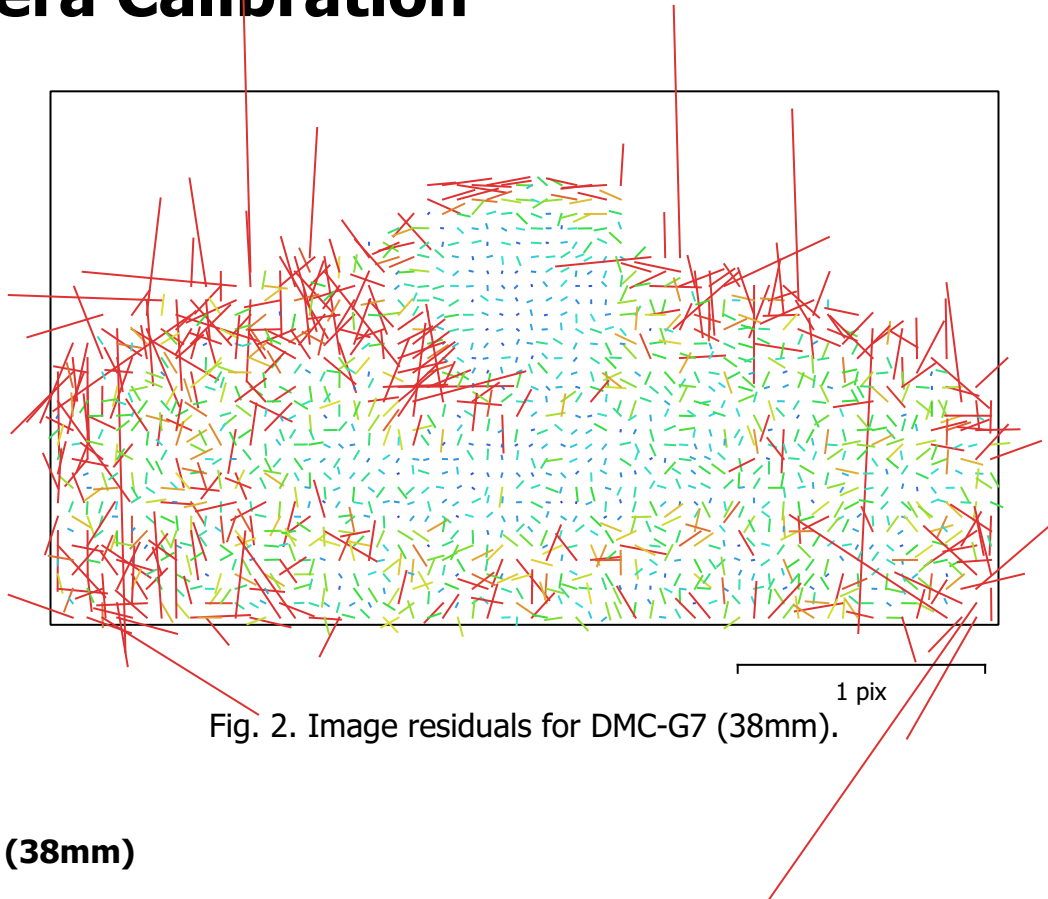


Fig. 2. Image residuals for DMC-G7 (38mm).

DMC-G7 (38mm)

102 images

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

	Value	Error	F	K1	P1	P2
F	10509.4	1.1	1.00	-0.24	-0.22	0.54
K1	0.020963	0.00071		1.00	0.32	-0.32
P1	0.00237167	2.2e-05			1.00	-0.21
P2	-0.00236654	9.2e-05				1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

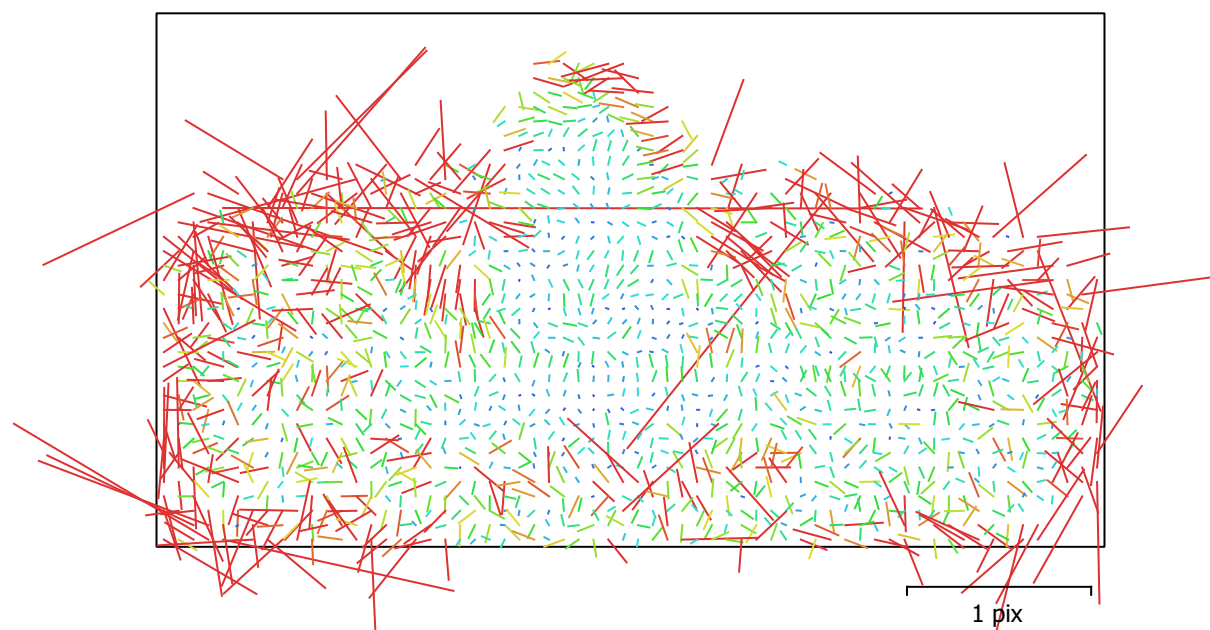


Fig. 3. Image residuals for DMC-G7 (38mm).

DMC-G7 (38mm)

77 images

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

	Value	Error	F	K1	K2	P1	P2
F	10491.6	1.1	1.00	-0.12	0.11	0.05	0.43
K1	0.0618207	0.0013		1.00	-0.88	-0.14	0.15
K2	-0.776915	0.026			1.00	0.40	-0.15
P1	0.00247114	2.2e-05				1.00	-0.05
P2	0.00112817	6.9e-05					1.00

Table 3. Calibration coefficients and correlation matrix.

Ground Control Points

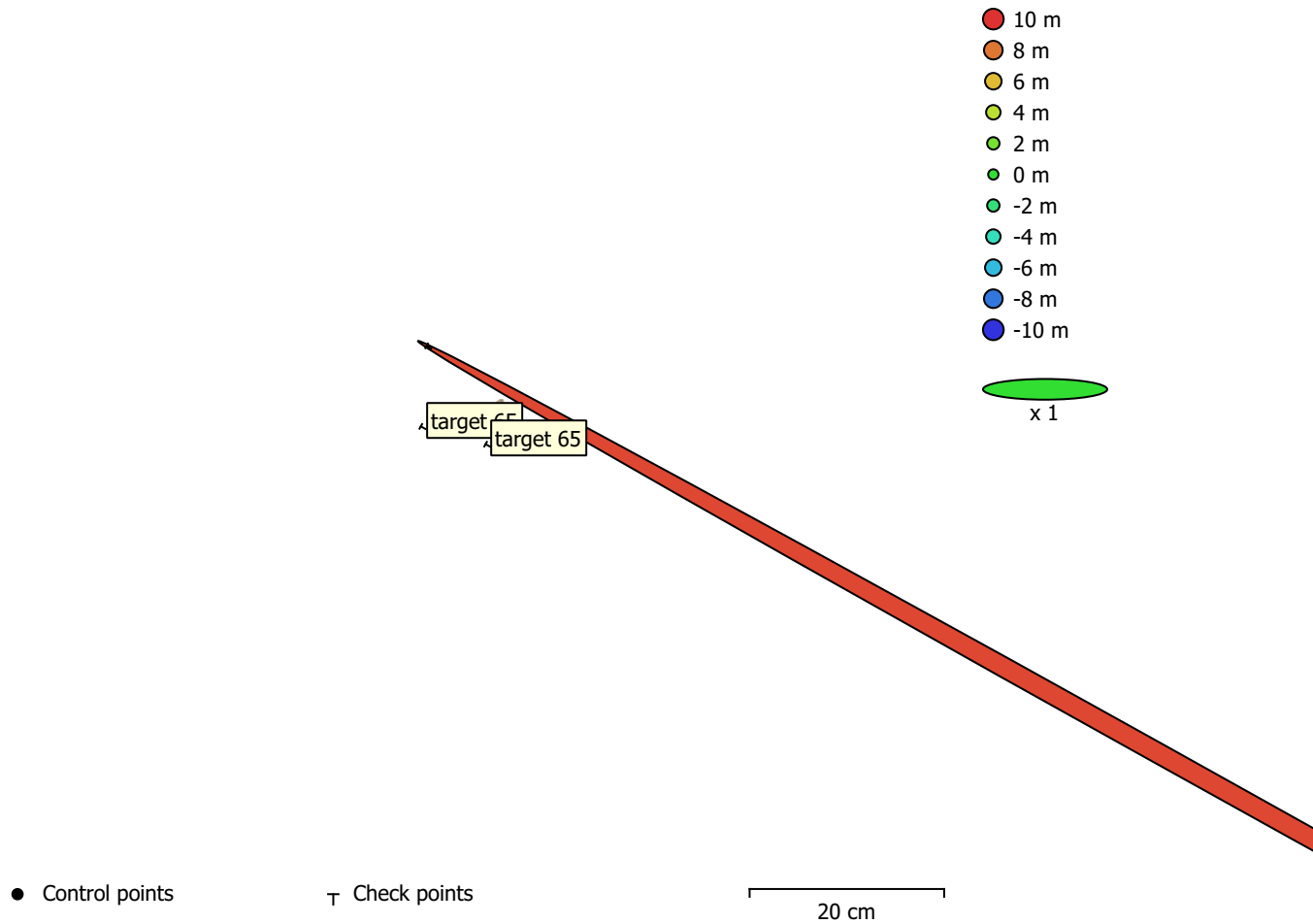


Fig. 4. GCP locations and error estimates.

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	1.49457	0.831999	9.40046	1.71054	9.55482

Table 4. Check points RMSE.

Label	X error (m)	Y error (m)	Z error (m)	Total (m)	Image (pix)
point 1	-1.49457	0.831999	9.40046	9.55482	0.000 (76)
target 65					0.429 (23)
target 65					0.660 (17)
Total	1.49457	0.831999	9.40046	9.55482	0.000

Table 5. Check points.

Scale Bars

Label	Distance (m)	Error (m)
target 65_point 1	0.15	2.60902e-15
Total		2.60902e-15

Table 6. Control scale bars.

Digital Elevation Model

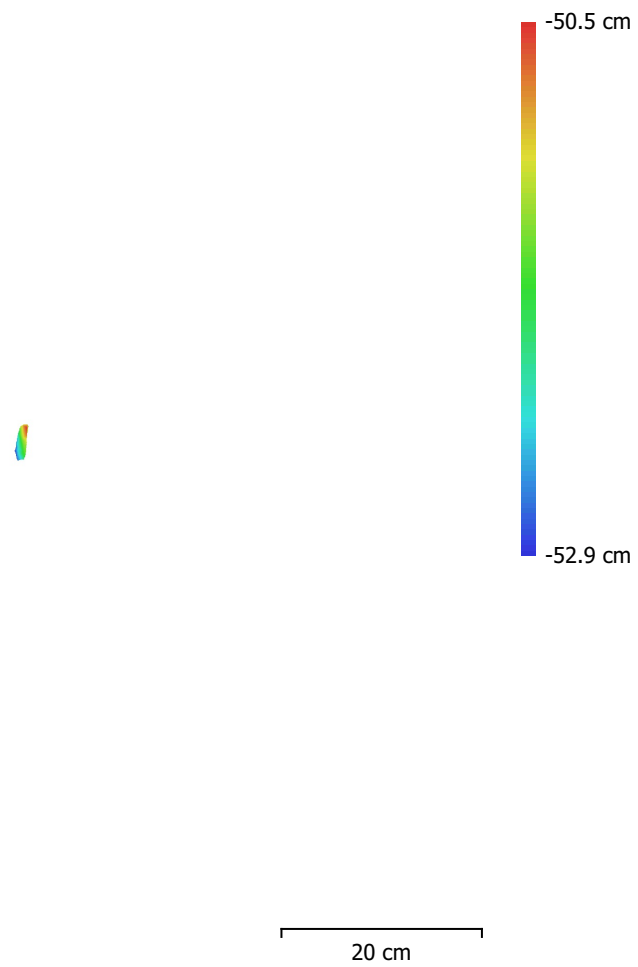


Fig. 5. Reconstructed digital elevation model.

Resolution: 0.144 mm/pix
Point density: 48.1 points/mm²

Processing Parameters

General

Cameras	179
Aligned cameras	179
Markers	3
Scale bars	1
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	216,218 of 296,304
RMS reprojection error	0.297356 (0.715035 pix)
Max reprojection error	0.919138 (32.2643 pix)
Mean key point size	2.0715 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.39619
File size	21.17 MB

Depth Maps

Count	179
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	10 minutes 3 seconds
Memory usage	6.70 GB
Date created	2024:06:15 15:12:47
Software version	1.8.4.14671
File size	69.54 MB

Model

Faces	53,772
Vertices	26,888
Vertex colors	3 bands, uint8
Texture	16,000 x 16,000 x 2, 4 bands, uint8

Depth maps generation parameters

Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	10 minutes 3 seconds
Memory usage	6.70 GB

Reconstruction parameters

Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	1 minutes 23 seconds
Memory usage	12.08 GB

Texturing parameters

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

Enable ghosting filter	Yes
UV mapping time	7 seconds
UV mapping memory usage	880.44 MB
Blending time	1 minutes 21 seconds
Blending memory usage	12.95 GB
Blending GPU memory usage	11.89 GB
Date created	2024:06:15 15:14:10
Software version	1.8.4.14671
File size	91.17 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