

Agisoft Metashape

Processing Report

12 July 2024



Survey Data

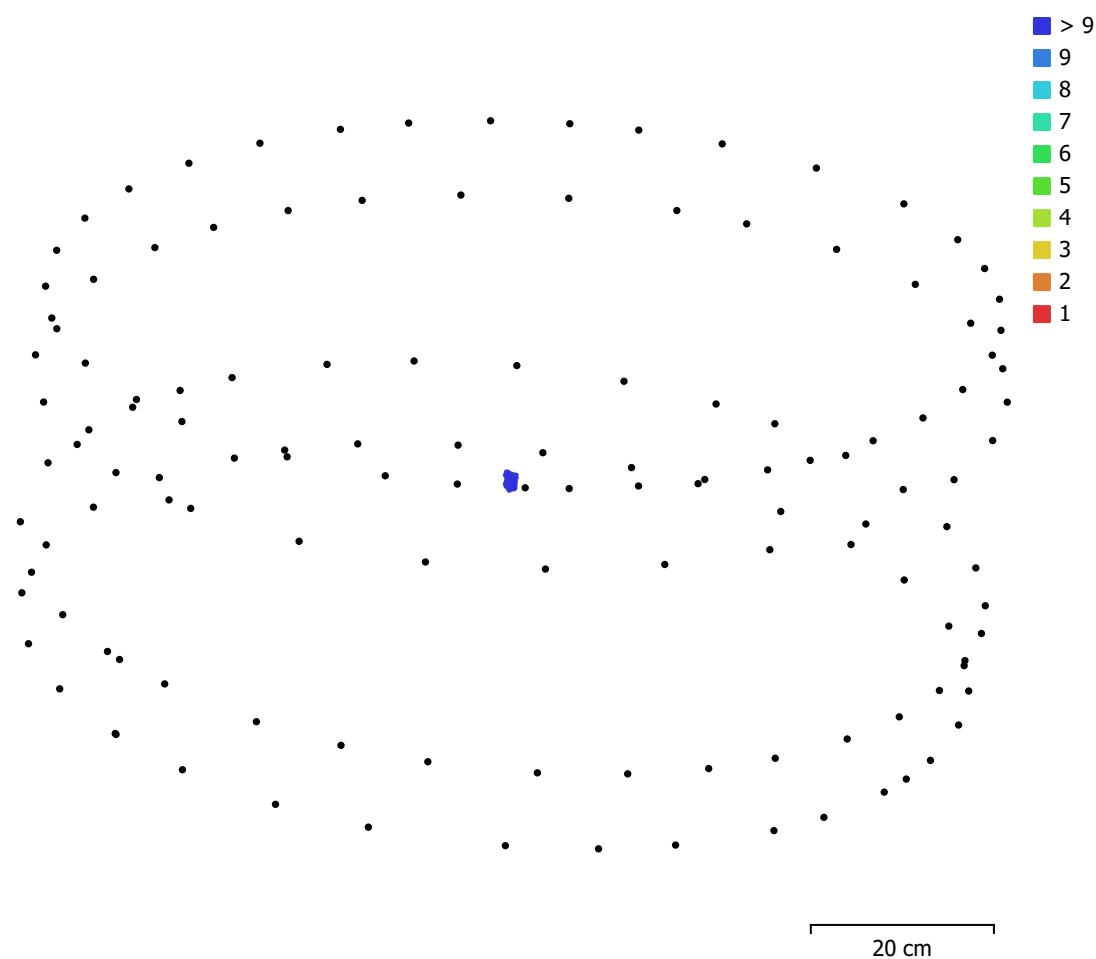


Fig. 1. Camera locations and image overlap.

Number of images:	131	Camera stations:	131
Flying altitude:	52.5 cm	Tie points:	114,063
Ground resolution:	0.0334 mm/pix	Projections:	283,393
Coverage area:	3.36 cm ²	Reprojection error:	0.832 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
DMC-G7 (60mm)	4592 x 2584	60 mm	3.79 x 3.79 μm	No
DMC-G7 (60mm)	4592 x 2584	60 mm	3.79 x 3.79 μm	No

Table 1. Cameras.

Camera Calibration

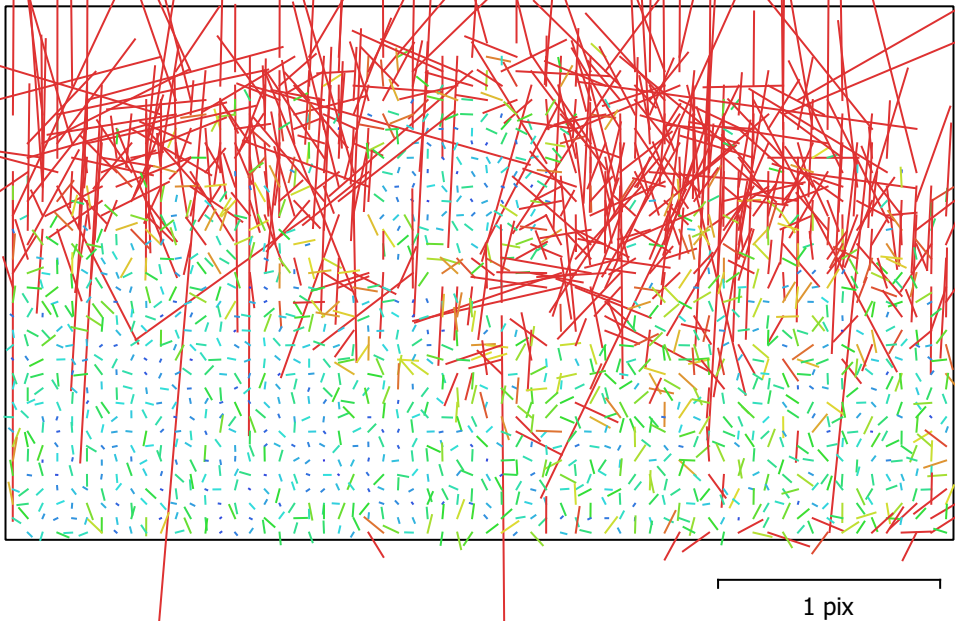


Fig. 2. Image residuals for DMC-G7 (60mm).

DMC-G7 (60mm)

64 images

Type	Resolution	Focal Length	Pixel Size
Frame	4592 x 2584	60 mm	3.79 x 3.79 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	15720.1	4.9	1.00	0.32	-0.47	-0.30	0.25	-0.23	0.28	-0.14
Cx	167.131	13		1.00	-0.10	-0.18	0.20	-0.20	0.98	0.04
Cy	-202.639	9.8			1.00	0.04	-0.12	0.13	-0.09	0.66
K1	0.272761	0.011				1.00	-0.94	0.87	-0.16	-0.12
K2	-7.63166	0.63					1.00	-0.98	0.21	-0.05
K3	109.839	12						1.00	-0.21	0.08
P1	0.00589251	0.00038							1.00	-0.00
P2	-0.00586476	0.00025								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

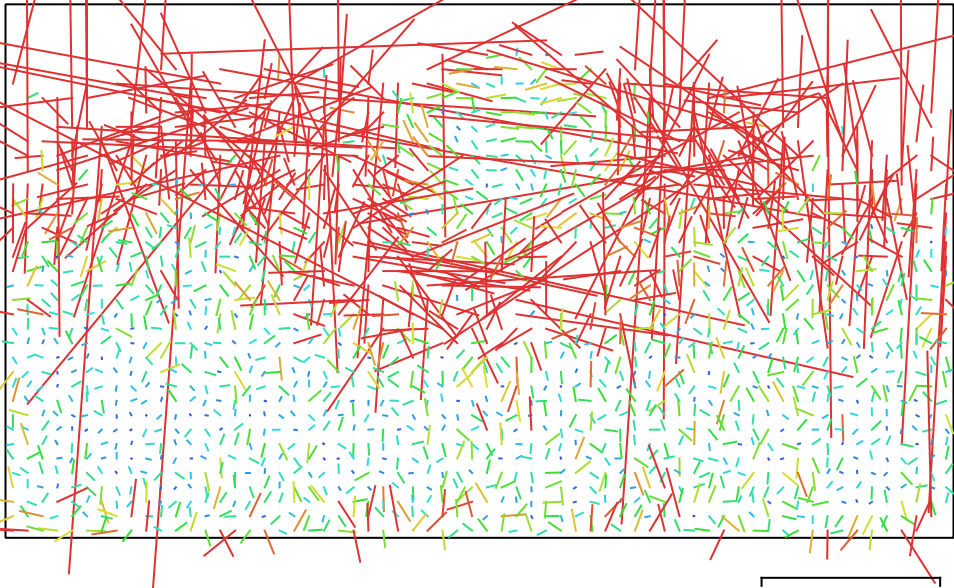


Fig. 3. Image residuals for DMC-G7 (60mm).

DMC-G7 (60mm)

67 images

Type	Resolution	Focal Length	Pixel Size
Frame	4592 x 2584	60 mm	3.79 x 3.79 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	15604.4	5.7	1.00	0.11	-0.66	-0.28	0.26	-0.25	0.08	-0.32
Cx	63.4576	13		1.00	-0.02	-0.03	0.09	-0.13	0.98	0.06
Cy	-4.24261	12			1.00	0.18	-0.21	0.22	0.00	0.71
K1	0.248899	0.0092				1.00	-0.95	0.89	-0.02	-0.03
K2	-7.79269	0.63					1.00	-0.98	0.09	-0.07
K3	131.552	14						1.00	-0.12	0.10
P1	0.00287818	0.00035							1.00	0.06
P2	-0.00512286	0.00025								1.00

Table 3. Calibration coefficients and correlation matrix.

Scale Bars

Label	Distance (m)	Error (m)
target 15_target 16	0.0500132	1.31725e-05
target 19_target 20	0.0499868	-1.3179e-05
Total		1.31758e-05

Table 4. Control scale bars.

Digital Elevation Model

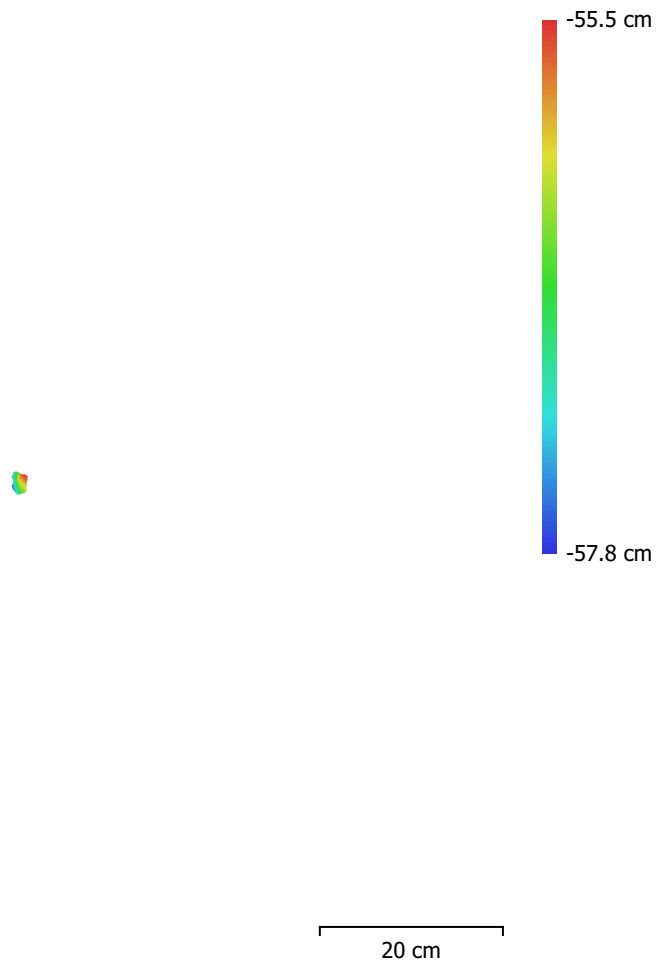


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.089 mm/pix
Point density: 126 points/mm²

Processing Parameters

General

Cameras	131
Aligned cameras	131
Markers	8
Scale bars	2
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	114,063 of 145,081
RMS reprojection error	0.181631 (0.831967 pix)
Max reprojection error	0.587785 (50.933 pix)
Mean key point size	3.24747 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.73444
File size	9.10 MB

Depth Maps

Count	128
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	6 minutes 36 seconds
Memory usage	5.75 GB
Date created	2024:05:29 12:23:41
Software version	1.8.4.14671
File size	52.87 MB

Model

Faces	220,500
Vertices	110,252
Vertex colors	3 bands, uint8
Texture	16,384 x 16,384, 4 bands, uint8

Texturing parameters

Mapping mode	Generic
Blending mode	Mosaic
Texture size	16,384
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	22 seconds
UV mapping memory usage	299.75 MB
Blending time	45 seconds
Blending memory usage	8.51 GB
Blending GPU memory usage	6.40 GB
File size	89.14 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