

Agisoft Metashape

Processing Report

24 June 2024



Survey Data

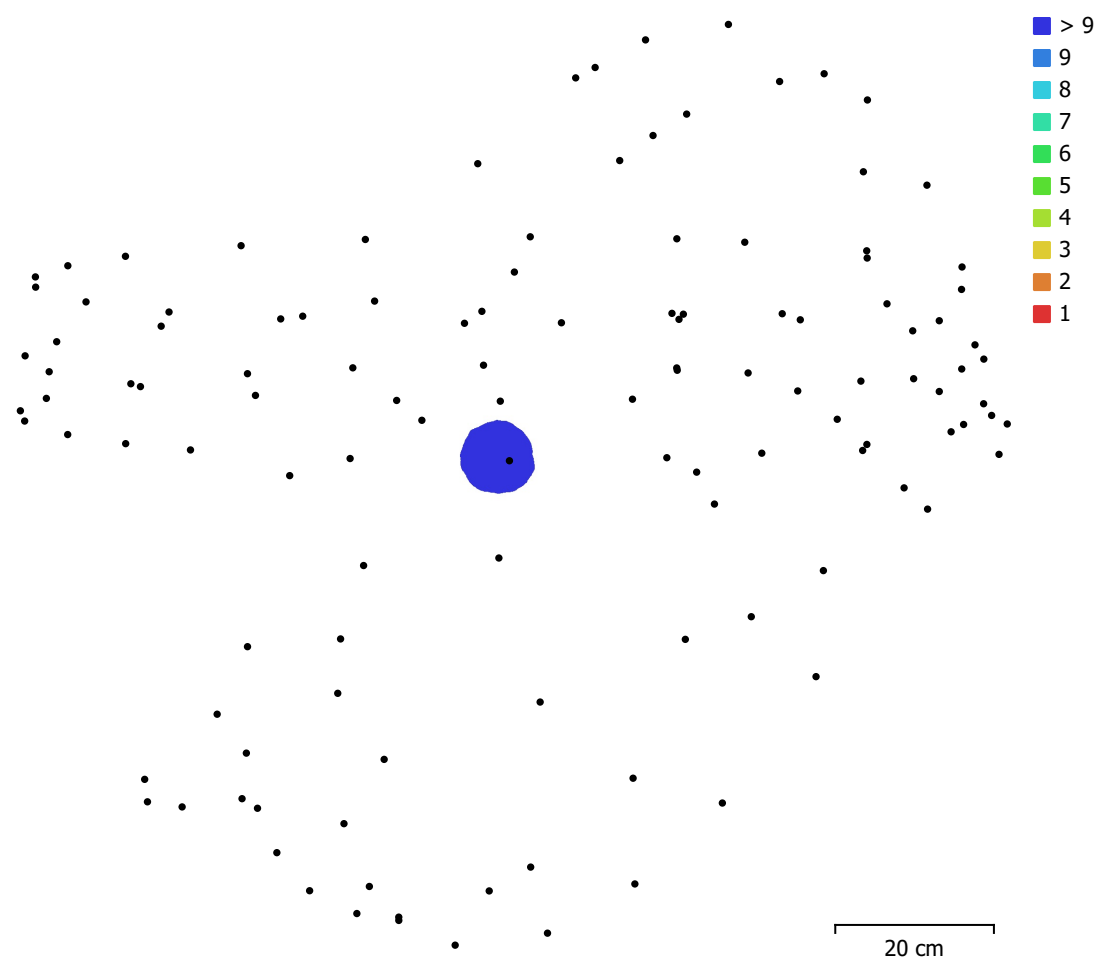


Fig. 1. Camera locations and image overlap.

Number of images:	123	Camera stations:	123
Flying altitude:	58.7 cm	Tie points:	471,369
Ground resolution:	0.0443 mm/pix	Projections:	1,489,555
Coverage area:	67.7 cm ²	Reprojection error:	0.5 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
DMC-G7 (49mm)	4592 x 2584	49 mm	3.8 x 3.8 μm	No
DMC-G7 (49mm)	4592 x 2584	49 mm	3.8 x 3.8 μm	No
DMC-G7 (49mm)	4592 x 2584	49 mm	3.8 x 3.8 μm	No

Table 1. Cameras.

Camera Calibration

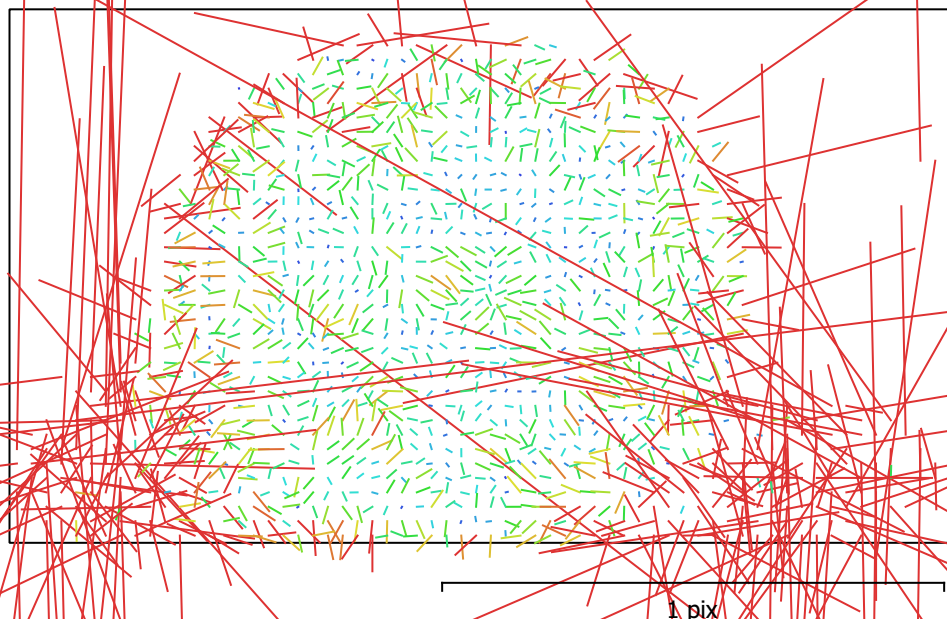


Fig. 2. Image residuals for DMC-G7 (49mm).

DMC-G7 (49mm)

63 images

Type

Frame

Resolution

4592 x 2584

Focal Length

49 mm

Pixel Size

3.8 x 3.8 μ m

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	13190.1	2.2	1.00	0.12	-0.16	-0.19	0.02	0.02	0.00	-0.11
Cx	44.6017	2.4		1.00	-0.16	-0.13	0.19	-0.11	0.93	-0.16
Cy	2.45189	5.7			1.00	0.04	-0.19	0.07	-0.16	0.99
K1	0.119591	0.0013				1.00	-0.86	0.75	-0.09	0.00
K2	-3.43323	0.15					1.00	-0.94	0.22	-0.18
K3	42.1241	4.9						1.00	-0.13	0.06
P1	0.00295383	6.8e-05							1.00	-0.17
P2	-0.00369056	0.00014								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

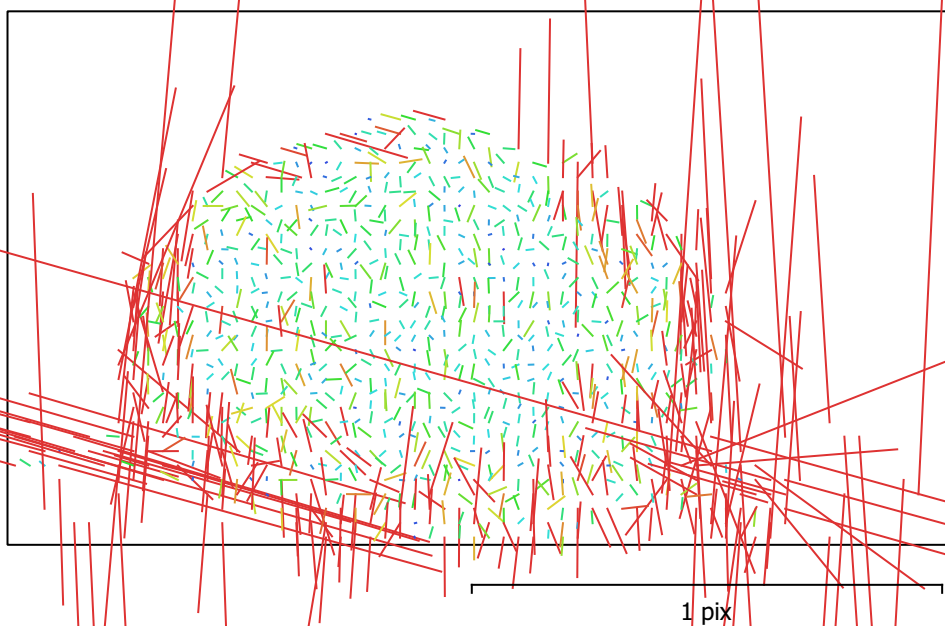


Fig. 3. Image residuals for DMC-G7 (49mm).

DMC-G7 (49mm)

18 images

Type

Resolution

Focal Length

Pixel Size

Frame

4592 x 2584

49 mm

3.8 x 3.8 μ m

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	13215.3	23	1.00	0.13	-0.58	-0.40	-0.12	0.41	0.20	0.29
Cx	-118.693	15		1.00	-0.22	-0.19	0.23	-0.05	0.88	-0.13
Cy	6.46828	45			1.00	0.08	0.16	-0.69	-0.53	0.46
K1	-0.0302218	0.018				1.00	-0.75	0.41	-0.10	-0.33
K2	11.2508	1.4					1.00	-0.78	0.12	0.11
K3	-491.227	48						1.00	0.19	-0.39
P1	-0.00344178	0.00055							1.00	-0.33
P2	-0.00596405	0.00069								1.00

Table 3. Calibration coefficients and correlation matrix.

Camera Calibration

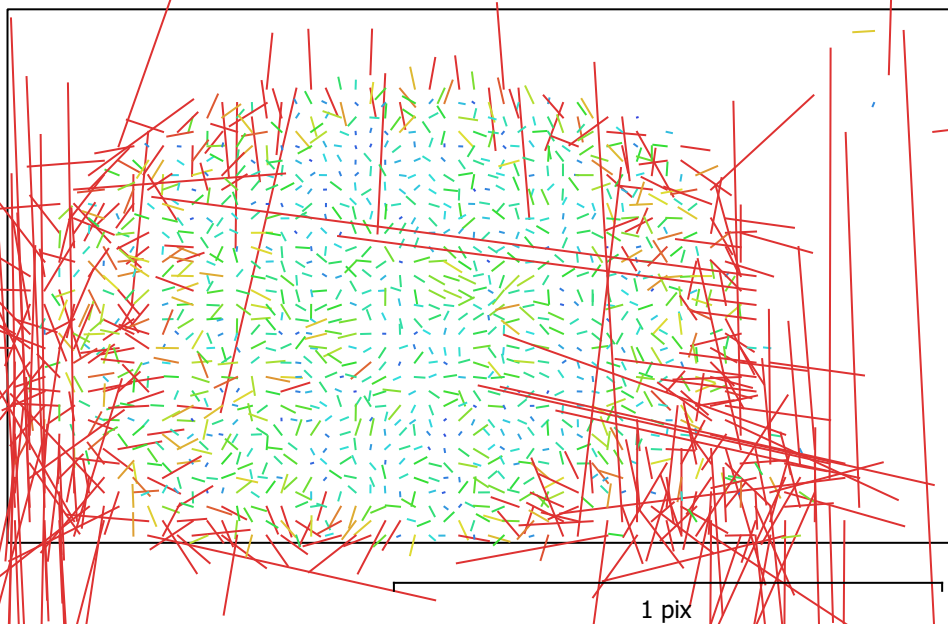


Fig. 4. Image residuals for DMC-G7 (49mm).

DMC-G7 (49mm)

42 images

Type

Frame

Resolution

4592 x 2584

Focal Length

49 mm

Pixel Size

3.8 x 3.8 μ m

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	13395.3	3.1	1.00	0.07	-0.15	-0.24	0.05	-0.04	-0.15	-0.06
Cx	133.506	4.3		1.00	-0.25	-0.07	0.31	-0.39	0.83	-0.19
Cy	27.939	8.2			1.00	-0.16	-0.09	0.14	-0.29	0.92
K1	0.0883581	0.0028				1.00	-0.77	0.62	0.23	-0.29
K2	-3.9506	0.15					1.00	-0.96	0.21	0.03
K3	79.7256	3.2						1.00	-0.31	0.05
P1	0.00548772	0.00014							1.00	-0.26
P2	-0.00156038	0.00016								1.00

Table 4. Calibration coefficients and correlation matrix.

Scale Bars

Label	Distance (m)	Error (m)
target 15_target 16	0.05	8.44207e-13
Total		8.44207e-13

Table 5. Control scale bars.

Digital Elevation Model

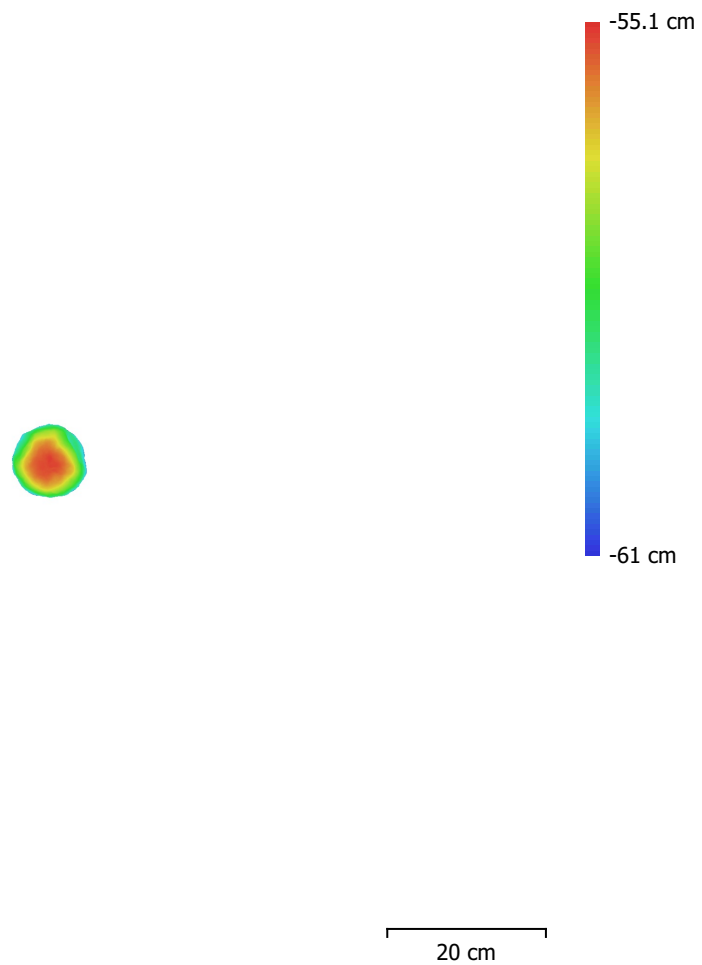


Fig. 5. Reconstructed digital elevation model.

Resolution: 0.159 mm/pix
Point density: 39.5 points/mm²

Processing Parameters

General

Cameras	123
Aligned cameras	123
Markers	8
Scale bars	3
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	471,369 of 521,176
RMS reprojection error	0.140679 (0.49997 pix)
Max reprojection error	0.441982 (37.2138 pix)
Mean key point size	2.91411 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.35351
File size	38.96 MB

Depth Maps

Count	123
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	7 minutes 38 seconds
Memory usage	5.45 GB
Date created	2024:05:24 17:29:45
Software version	1.8.4.14671
File size	497.06 MB

Model

Faces	1,184,890
Vertices	592,451
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	7 minutes 38 seconds
Memory usage	5.45 GB

Reconstruction parameters

Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	2 minutes 52 seconds
Memory usage	7.90 GB

Texturing parameters

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

Enable ghosting filter	Yes
UV mapping time	1 minutes 14 seconds
UV mapping memory usage	2.73 GB
Blending time	1 minutes 26 seconds
Blending memory usage	14.45 GB
Blending GPU memory usage	11.95 GB
Date created	2024:05:24 17:32:36
Software version	1.8.4.14671
File size	344.92 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