

# **Agisoft Metashape**

**Processing Report**

**12 July 2024**



# Survey Data

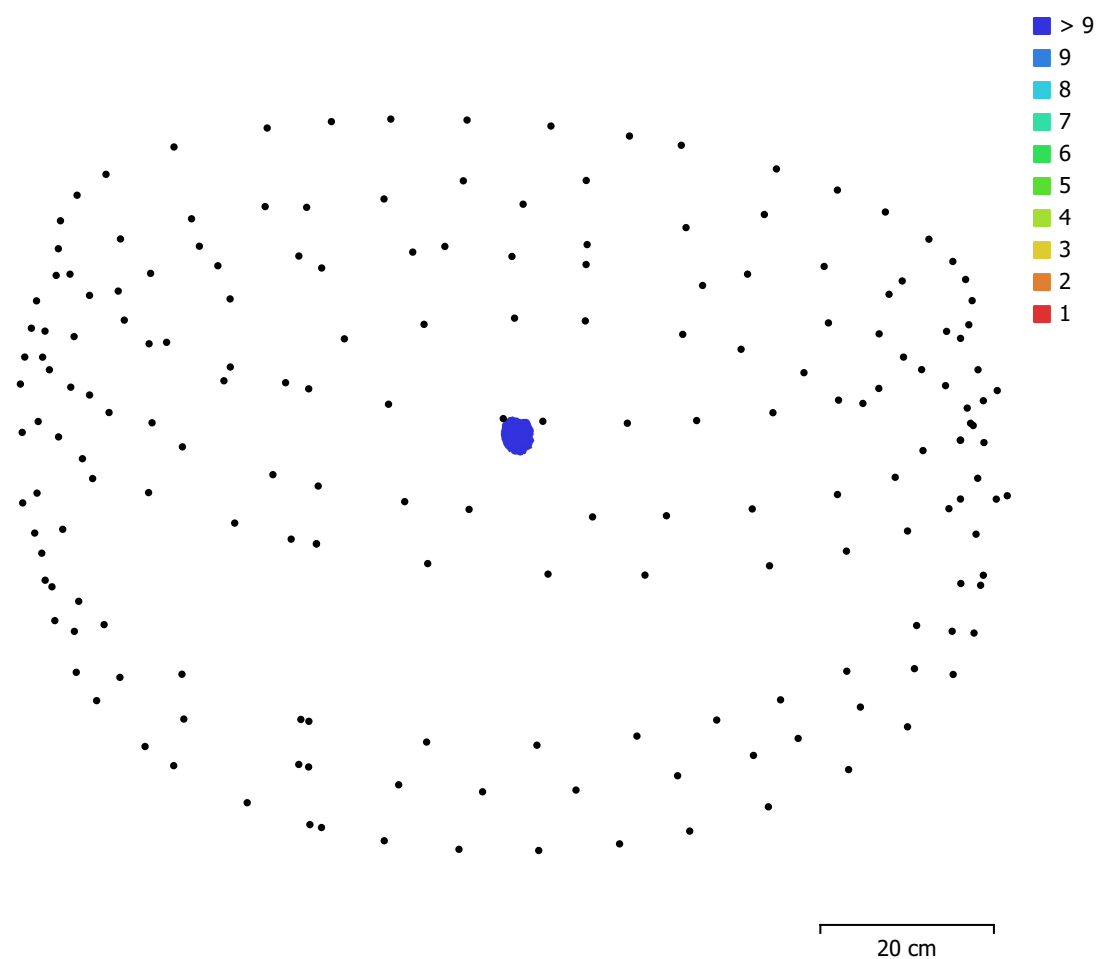


Fig. 1. Camera locations and image overlap.

Number of images:	188	Camera stations:	188
Flying altitude:	54.5 cm	Tie points:	212,216
Ground resolution:	0.0351 mm/pix	Projections:	676,771
Coverage area:	13.3 cm <sup>2</sup>	Reprojection error:	0.76 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

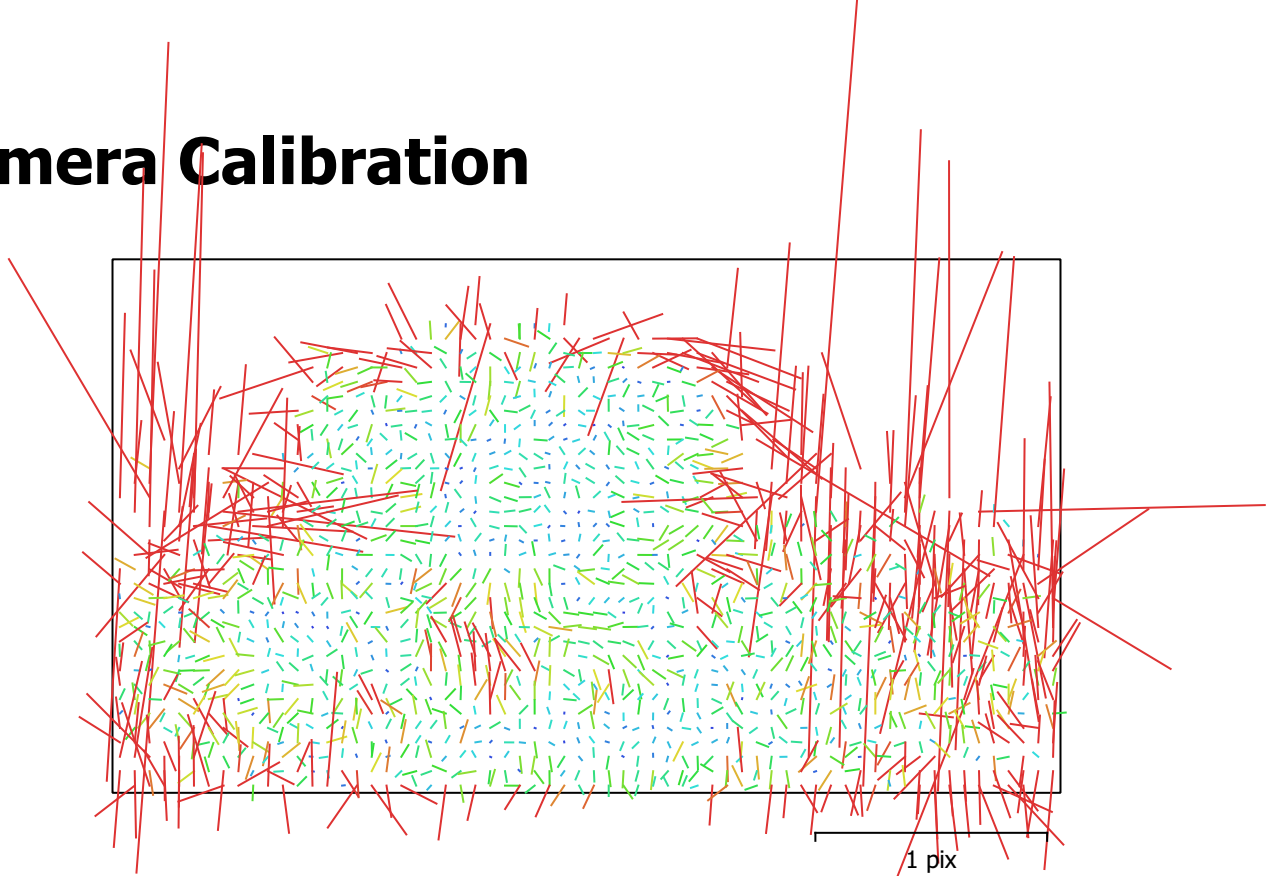


Fig. 2. Image residuals for DMC-G7 (60mm).

## DMC-G7 (60mm)

97 images

Type

Resolution

Focal Length

Pixel Size

Frame

**4592 x 2584**

**60 mm**

**3.79 x 3.79  $\mu$ m**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>15406.1</b>	5.6	1.00	-0.26	-0.33	-0.34	0.26	-0.23	-0.23	0.09
<b>Cx</b>	<b>-364.671</b>	5.5		1.00	-0.10	0.16	-0.08	0.09	0.93	-0.21
<b>Cy</b>	<b>-709.559</b>	10			1.00	0.20	-0.52	0.54	-0.19	0.63
<b>K1</b>	<b>0.643776</b>	0.0087				1.00	-0.85	0.75	0.12	-0.34
<b>K2</b>	<b>-18.0547</b>	0.41					1.00	-0.97	-0.01	-0.13
<b>K3</b>	<b>202.608</b>	6.5						1.00	0.03	0.17
<b>P1</b>	<b>-0.00627641</b>	0.00017							1.00	-0.26
<b>P2</b>	<b>-0.0239625</b>	0.00034								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Calibration

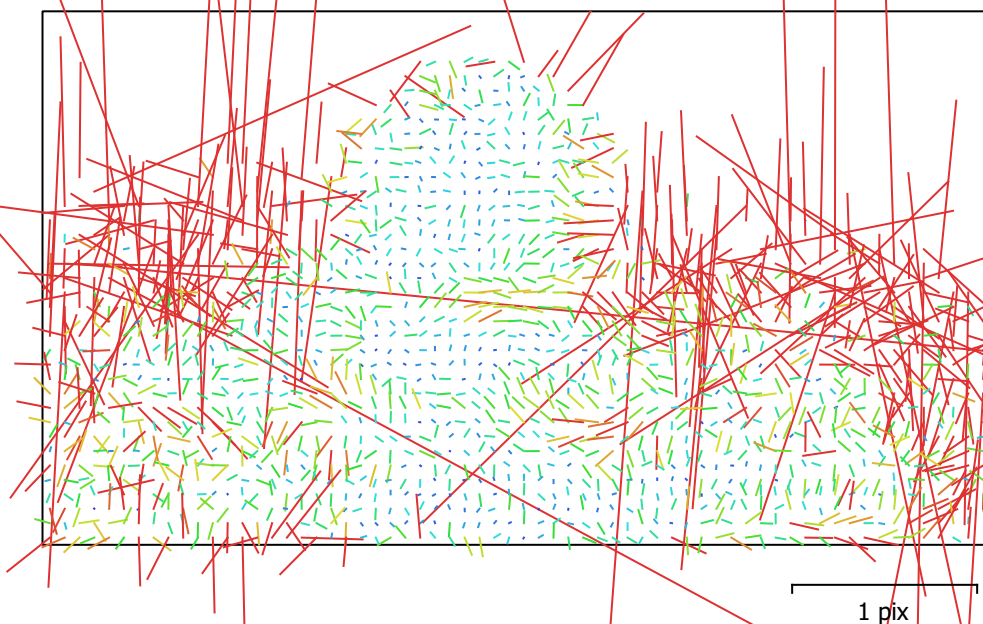


Fig. 3. Image residuals for DMC-G7 (60mm).

## DMC-G7 (60mm)

91 images

Type

Resolution

Focal Length

Pixel Size

Frame

**4592 x 2584**

**60 mm**

**3.79 x 3.79  $\mu$ m**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>15626.4</b>	4.9	1.00	0.12	-0.30	-0.17	0.19	-0.18	0.05	0.00
<b>Cx</b>	<b>415.23</b>	9.1		1.00	-0.16	-0.04	0.49	-0.58	0.91	-0.24
<b>Cy</b>	<b>-519.405</b>	11			1.00	-0.10	-0.38	0.47	-0.19	0.75
<b>K1</b>	<b>0.229753</b>	0.005				1.00	-0.70	0.55	0.16	-0.44
<b>K2</b>	<b>-9.95621</b>	0.26					1.00	-0.97	0.40	-0.17
<b>K3</b>	<b>129.992</b>	4.8						1.00	-0.50	0.30
<b>P1</b>	<b>0.0104486</b>	0.00022							1.00	-0.37
<b>P2</b>	<b>-0.00474717</b>	0.00022								1.00

Table 3. Calibration coefficients and correlation matrix.

# Scale Bars

Label	Distance (m)	Error (m)
target 15_target 16	0.0501604	0.000160364
target 19_target 20	0.0498386	-0.000161365
Total		<b>0.000160865</b>

Table 4. Control scale bars.

# Digital Elevation Model

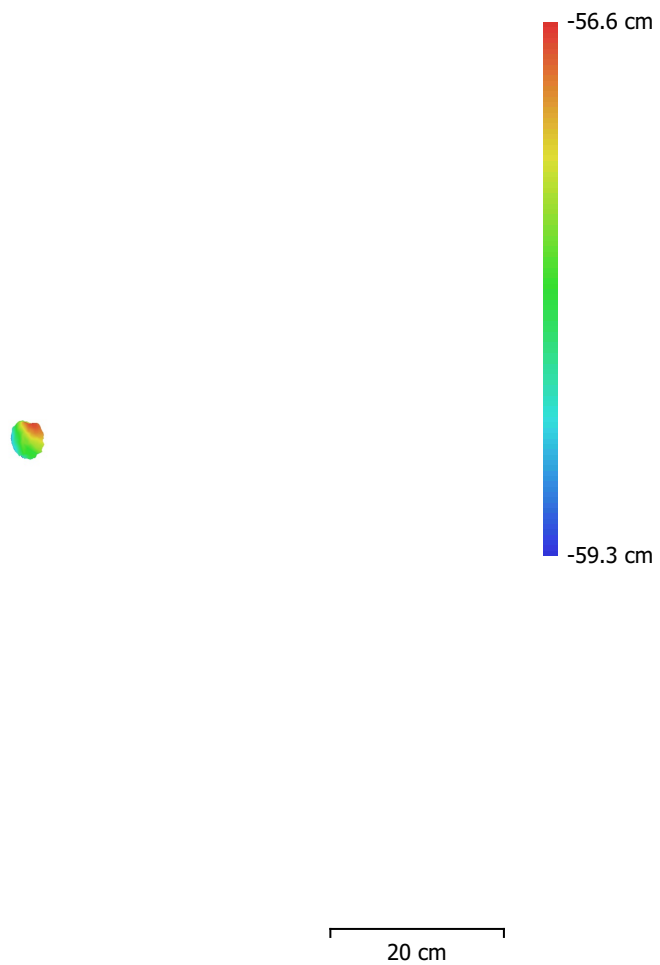


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.1 mm/pix  
Point density: 99.2 points/mm<sup>2</sup>

# Processing Parameters

## General

Cameras	188
Aligned cameras	188
Markers	8
Scale bars	2
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	212,216 of 291,908
RMS reprojection error	0.244585 (0.759849 pix)
Max reprojection error	0.764605 (35.3761 pix)
Mean key point size	2.79362 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.89503
File size	23.07 MB

## Depth Maps

Count	179
<b>Depth maps generation parameters</b>	
Quality	Medium
Filtering mode	Mild
Max neighbors	16
Processing time	1 minutes 22 seconds
Memory usage	1.19 GB
Date created	2024:07:12 12:55:26
Software version	1.8.4.14671
File size	11.68 MB

## Model

Faces	621,696
Vertices	310,850
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	19 seconds
UV mapping memory usage	504.25 MB
Blending time	56 seconds
Blending memory usage	7.82 GB
Blending GPU memory usage	6.42 GB
File size	127.32 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