

# **Agisoft Metashape**

**Processing Report**

**24 June 2024**



# Survey Data

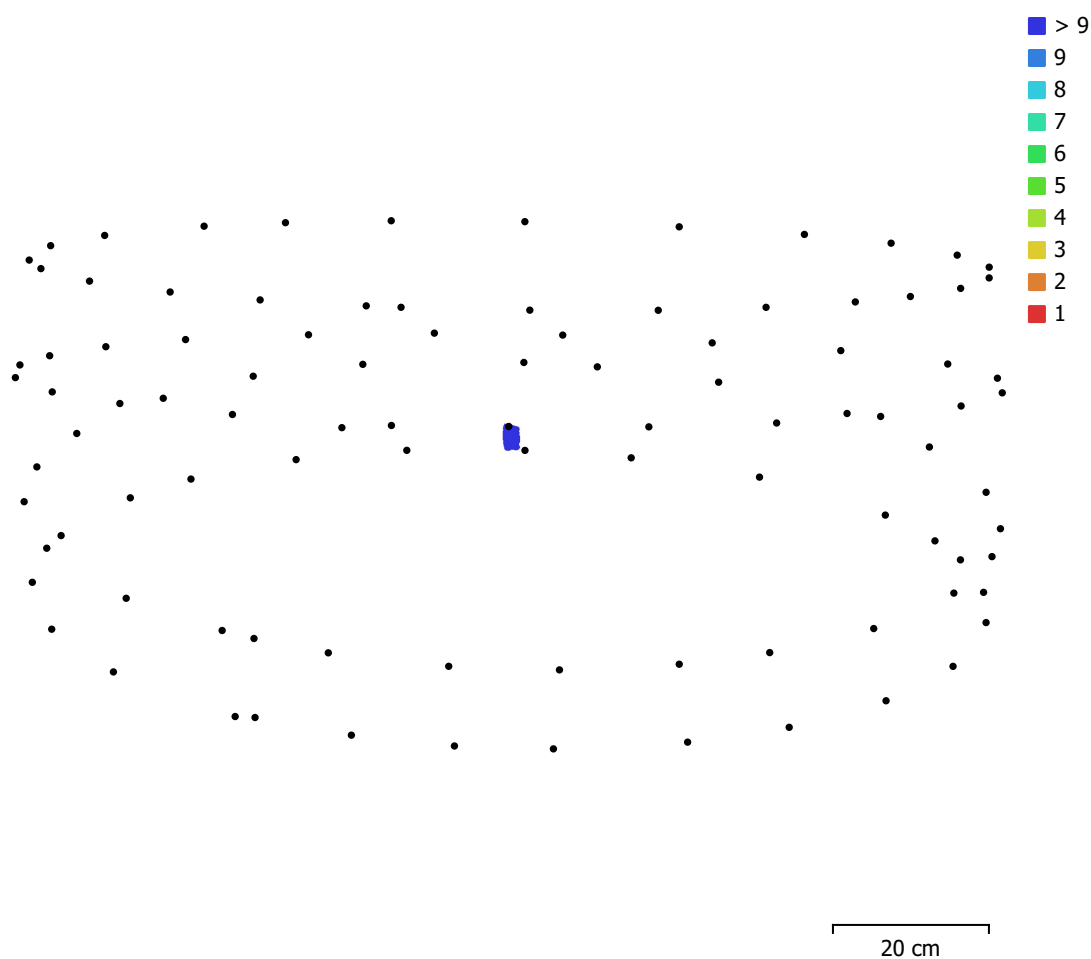


Fig. 1. Camera locations and image overlap.

Number of images:	98	Camera stations:	98
Flying altitude:	63.2 cm	Tie points:	27,697
Ground resolution:	0.0408 mm/pix	Projections:	92,338
Coverage area:	6.79 cm <sup>2</sup>	Reprojection error:	0.595 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

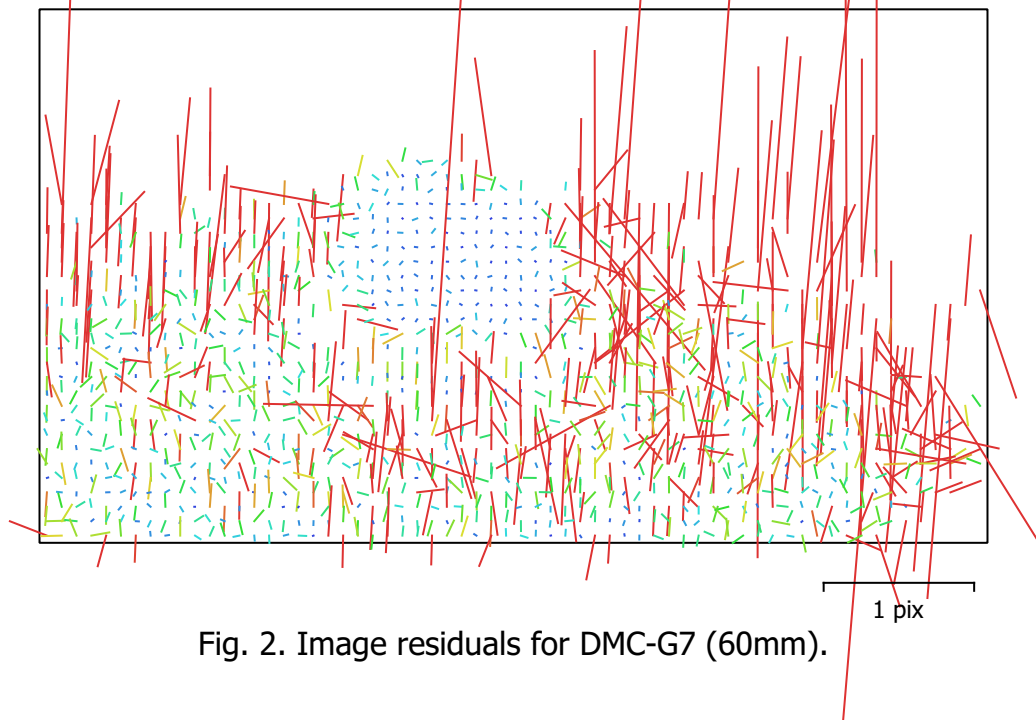


Fig. 2. Image residuals for DMC-G7 (60mm).

## DMC-G7 (60mm)

48 images

Type	Resolution	Focal Length	Pixel Size
<b>Frame</b>	<b>4592 x 2584</b>	<b>60 mm</b>	<b>3.79 x 3.79 <math>\mu\text{m}</math></b>

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>15542.7</b>	7.5	1.00	0.29	-0.62	-0.07	0.19	-0.23	0.32	-0.23
<b>Cx</b>	<b>-26.6458</b>	18		1.00	-0.24	-0.36	0.42	-0.43	0.95	-0.11
<b>Cy</b>	<b>18.2657</b>	19			1.00	0.00	-0.23	0.29	-0.32	0.67
<b>K1</b>	<b>0.313567</b>	0.018				1.00	-0.91	0.83	-0.32	-0.10
<b>K2</b>	<b>-18.5093</b>	1.4					1.00	-0.98	0.45	-0.14
<b>K3</b>	<b>340.127</b>	34						1.00	-0.47	0.19
<b>P1</b>	<b>0.000140674</b>	0.00041							1.00	-0.22
<b>P2</b>	<b>-0.00493179</b>	0.00038								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Calibration

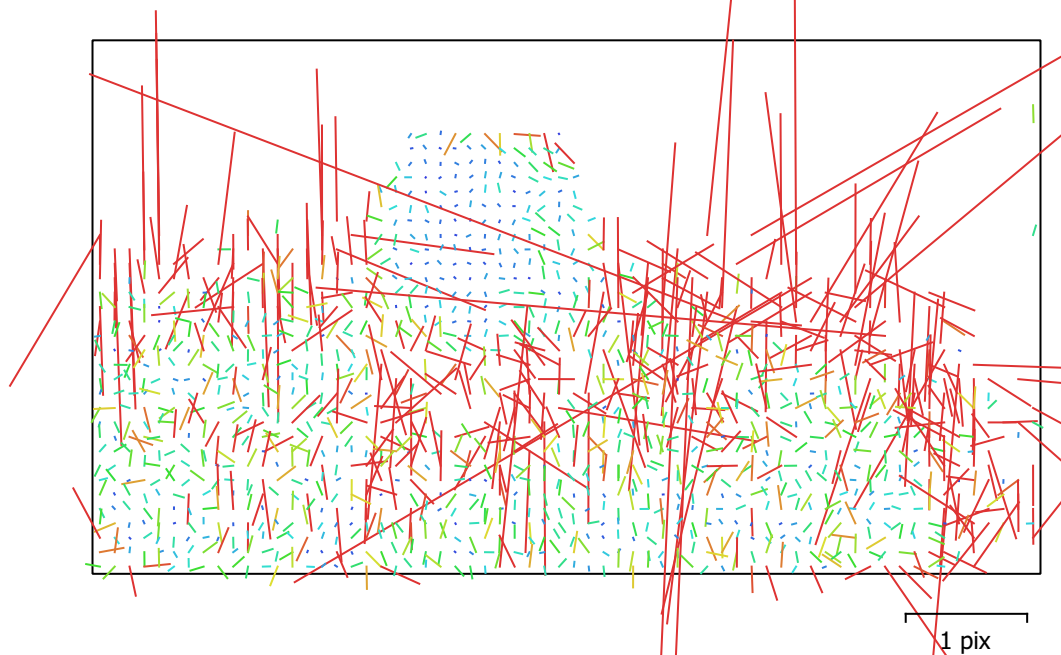


Fig. 3. Image residuals for DMC-G7 (60mm).

## DMC-G7 (60mm)

50 images

Type	Resolution	Focal Length	Pixel Size
<b>Frame</b>	<b>4592 x 2584</b>	<b>60 mm</b>	<b>3.79 x 3.79 <math>\mu</math>m</b>

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>15434.4</b>	11	1.00	0.11	-0.71	-0.01	-0.11	0.10	-0.04	-0.39
<b>Cx</b>	<b>224.547</b>	24		1.00	-0.01	-0.04	0.13	-0.14	0.93	-0.13
<b>Cy</b>	<b>489.666</b>	25			1.00	-0.08	0.15	-0.15	0.09	0.72
<b>K1</b>	<b>0.163644</b>	0.014				1.00	-0.91	0.85	-0.03	0.04
<b>K2</b>	<b>-6.29632</b>	1.2					1.00	-0.98	0.21	0.02
<b>K3</b>	<b>101.98</b>	28						1.00	-0.20	-0.03
<b>P1</b>	<b>0.00604823</b>	0.00069							1.00	-0.05
<b>P2</b>	<b>0.00207893</b>	0.00034								1.00

Table 3. Calibration coefficients and correlation matrix.

# Scale Bars

Label	Distance (m)	Error (m)
target 15_target 16	0.050004	3.95941e-06
target 19_target 20	0.049996	-3.96104e-06
Total		3.96023e-06

Table 4. Control scale bars.

# Digital Elevation Model

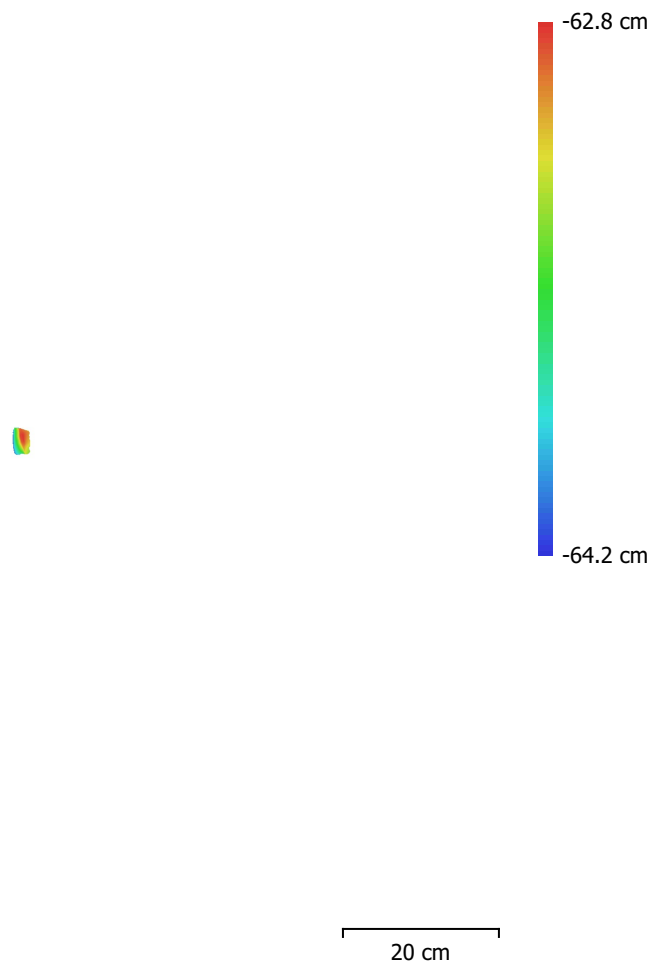


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.105 mm/pix  
Point density: 91.2 points/mm<sup>2</sup>

# Processing Parameters

## General

Cameras	98
Aligned cameras	98
Markers	9
Scale bars	2
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	27,697 of 57,985
RMS reprojection error	0.144545 (0.594798 pix)
Max reprojection error	0.494803 (31.6937 pix)
Mean key point size	2.84786 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.39486
File size	3.82 MB

## Depth Maps

Count	95
<b>Depth maps generation parameters</b>	
Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	4 minutes 52 seconds
Memory usage	4.39 GB
Date created	2024:06:01 11:15:55
Software version	1.8.4.14671
File size	33.82 MB

## Model

Faces	226,108
Vertices	113,056
Vertex colors	3 bands, uint8
Texture	16,000 x 16,000 x 2, 4 bands, uint8

## Texturing parameters

Mapping mode	Generic
Blending mode	Mosaic
Texture size	16,000
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	21 seconds
UV mapping memory usage	177.36 MB
Blending time	1 minutes 13 seconds
Blending memory usage	13.52 GB
Blending GPU memory usage	11.90 GB
File size	188.80 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