

# **Agisoft Metashape**

**Processing Report**

**24 June 2024**



# Survey Data

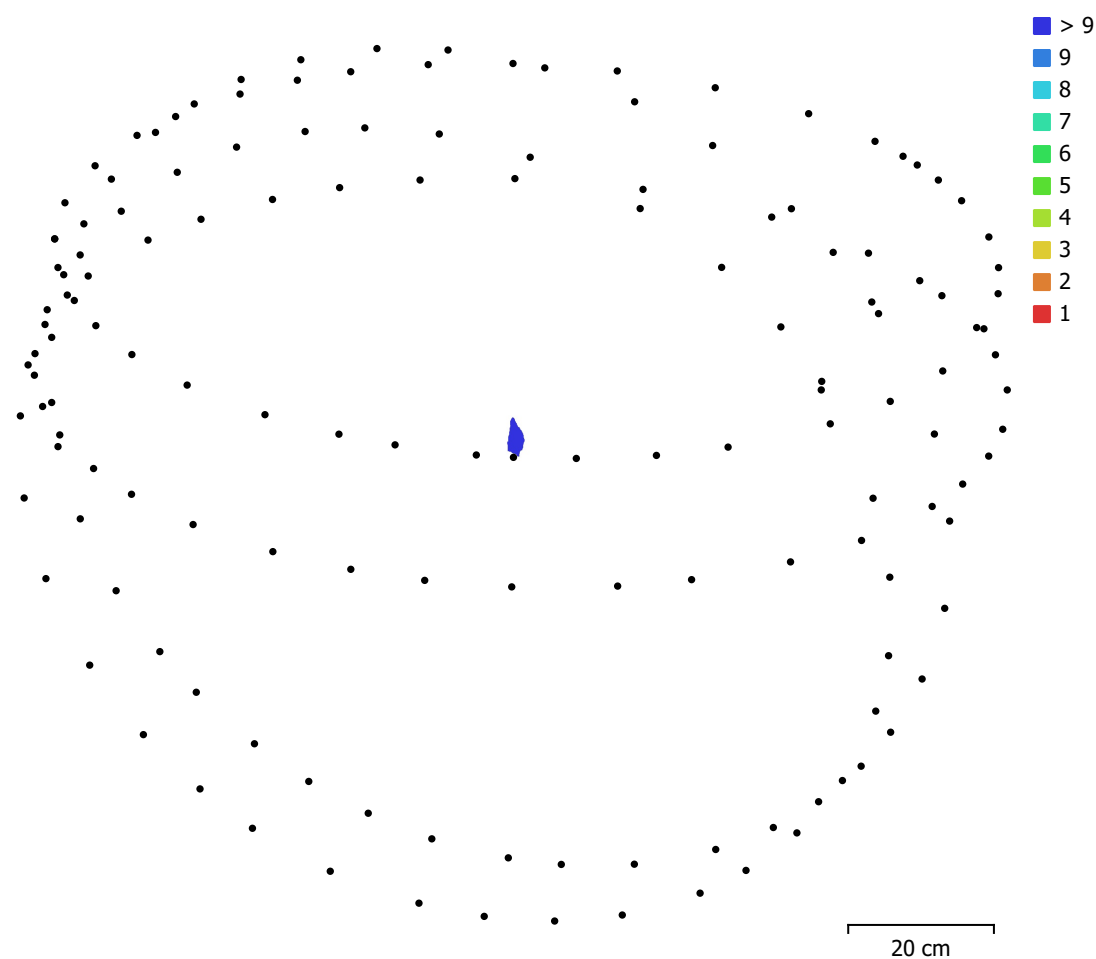


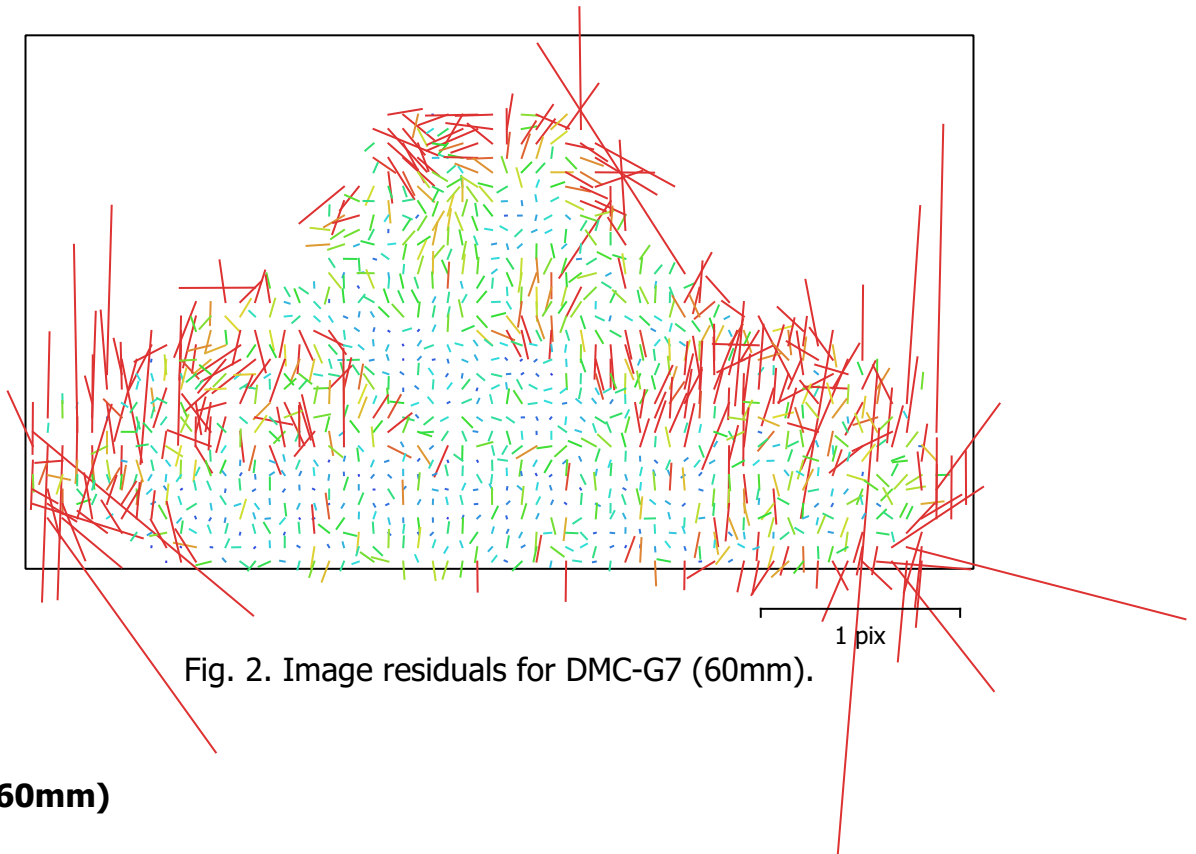
Fig. 1. Camera locations and image overlap.

Number of images:	149	Camera stations:	149
Flying altitude:	64.6 cm	Tie points:	139,360
Ground resolution:	0.0412 mm/pix	Projections:	444,607
Coverage area:	8.08 cm <sup>2</sup>	Reprojection error:	0.747 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



## DMC-G7 (60mm)

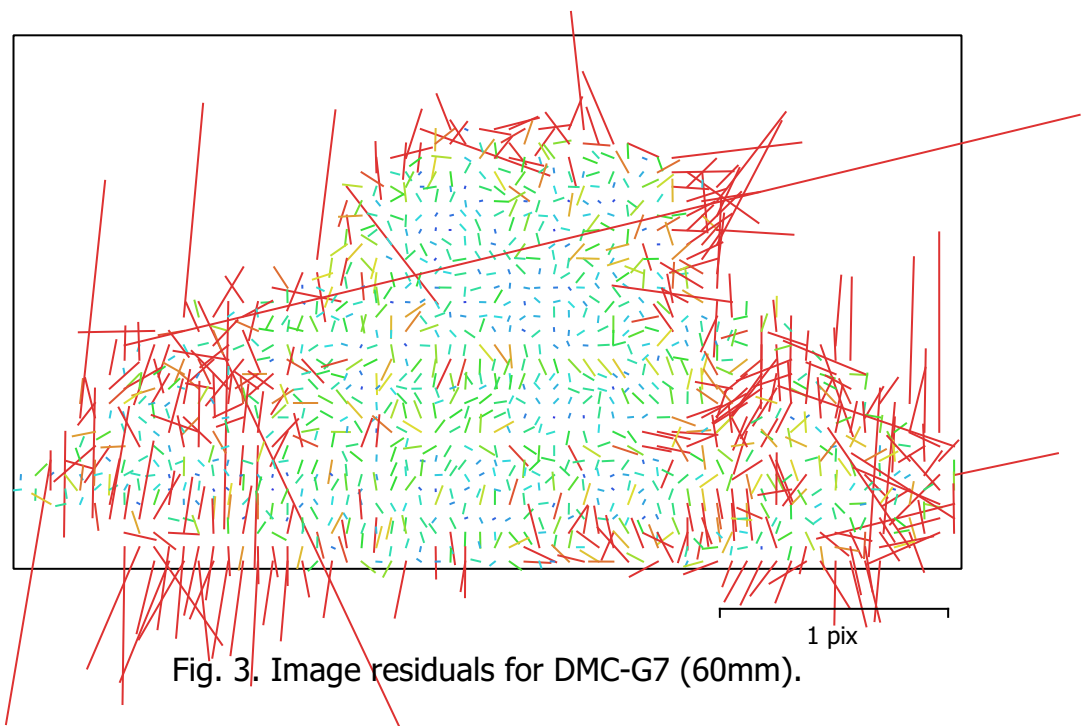
75 images

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>15811.3</b>	6.5	1.00	-0.51	-0.30	0.06	-0.41	0.46	-0.21	0.09
<b>Cx</b>	<b>-1430.21</b>	13		1.00	-0.04	0.01	0.47	-0.57	0.59	0.01
<b>Cy</b>	<b>-140.562</b>	8.8			1.00	-0.18	0.24	-0.22	-0.02	0.10
<b>K1</b>	<b>-0.207474</b>	0.0057				1.00	-0.75	0.60	-0.60	-0.53
<b>K2</b>	<b>5.63432</b>	0.17					1.00	-0.97	0.54	0.19
<b>K3</b>	<b>-46.8935</b>	2						1.00	-0.51	-0.09
<b>P1</b>	<b>-0.0277758</b>	0.00027							1.00	0.50
<b>P2</b>	<b>-0.00548247</b>	0.00012								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Calibration



## DMC-G7 (60mm)

74 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	15429.7	6.9	1.00	-0.46	-0.52	-0.32	-0.26	0.39	-0.14	0.10
Cx	-934.952	15		1.00	0.13	0.33	0.53	-0.78	0.82	-0.37
Cy	118.874	9.9			1.00	0.05	0.22	-0.26	0.03	0.23
K1	-0.0934139	0.0061				1.00	-0.48	0.16	-0.05	-0.52
K2	9.72222	0.25					1.00	-0.93	0.51	0.04
K3	-139.452	4.9						1.00	-0.66	0.15
P1	-0.0230202	0.00034							1.00	-0.16
P2	-0.00785226	0.00015								1.00

Table 3. Calibration coefficients and correlation matrix.

# Scale Bars

Label	Distance (m)	Error (m)
target 19_target 20	0.05	8.98587e-15
Total		<b>8.98587e-15</b>

Table 4. Control scale bars.

# Digital Elevation Model

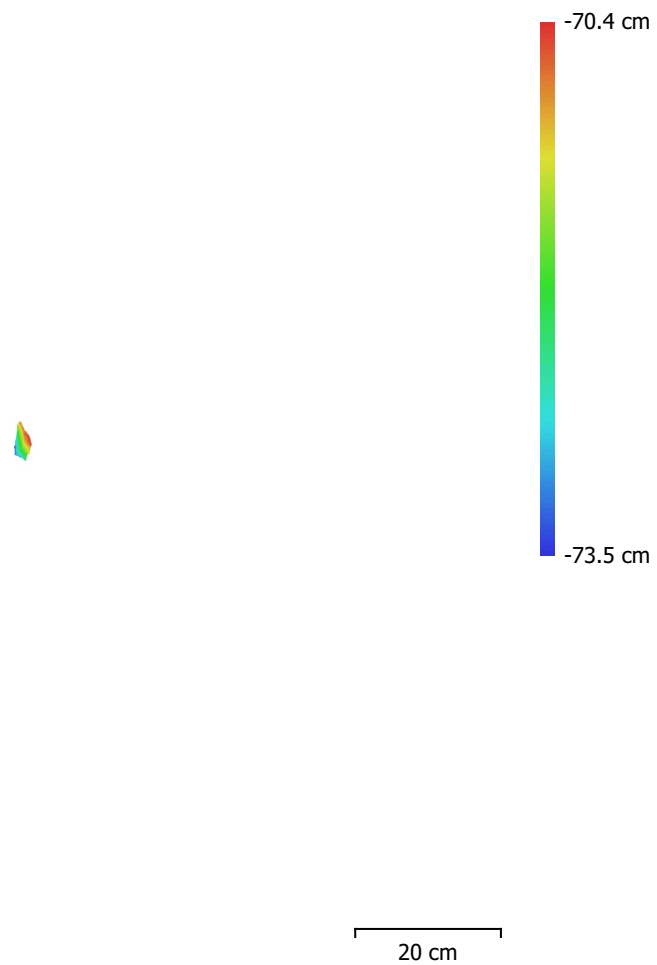


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.114 mm/pix  
Point density: 77.3 points/mm<sup>2</sup>

# Processing Parameters

## General

Cameras	149
Aligned cameras	149
Markers	4
Scale bars	1
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	139,360 of 173,132
RMS reprojection error	0.215103 (0.746528 pix)
Max reprojection error	0.664889 (40.0833 pix)
Mean key point size	3.13182 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.69397
File size	13.46 MB

## Depth Maps

Count	149
<b>Depth maps generation parameters</b>	
Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	3 minutes 10 seconds
Memory usage	3.25 GB
Date created	2024:06:14 18:44:20
Software version	1.8.4.14671
File size	23.15 MB

## Model

Faces	339,878
Vertices	169,941
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	25 seconds
UV mapping memory usage	728.64 MB
Blending time	1 minutes 18 seconds
Blending memory usage	12.88 GB
Blending GPU memory usage	11.91 GB
File size	154.94 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