

# **Agisoft Metashape**

**Processing Report**

**24 June 2024**



# Survey Data

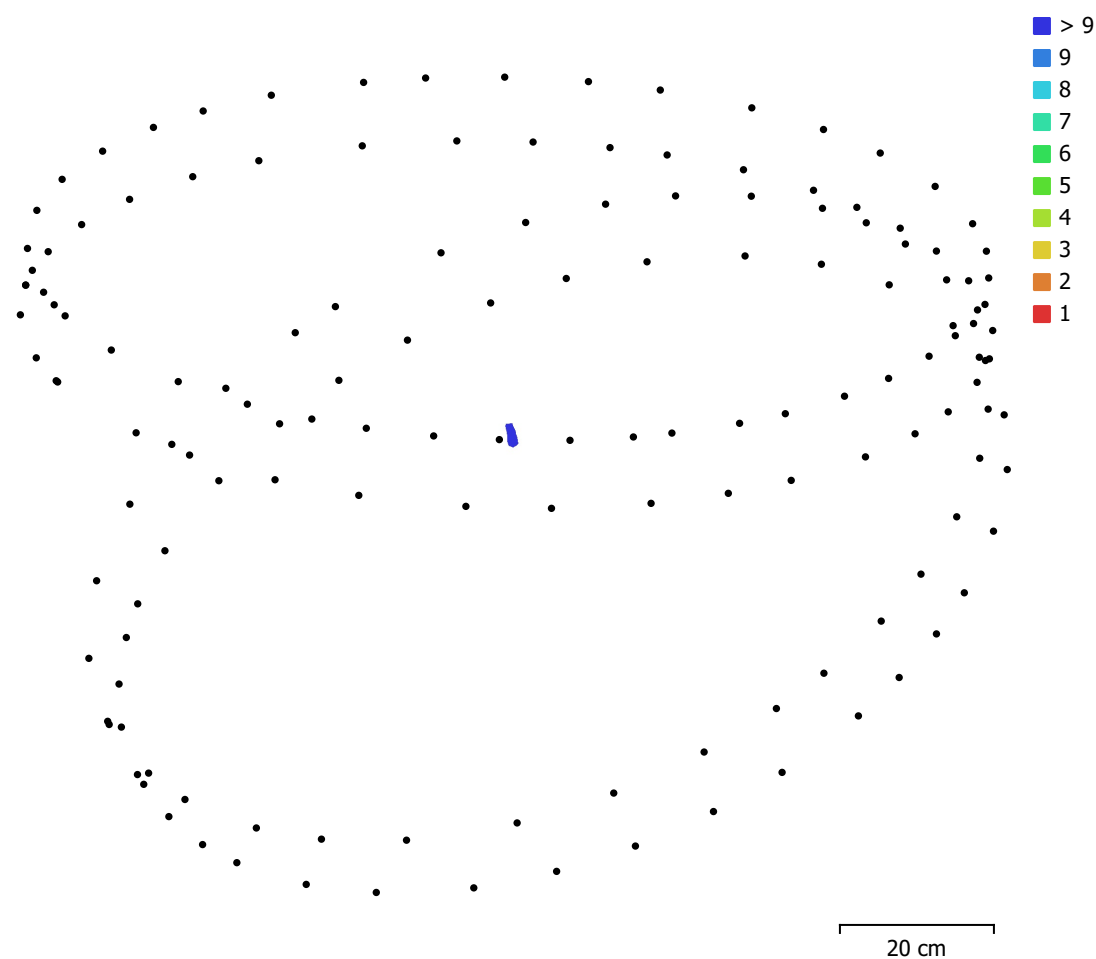


Fig. 1. Camera locations and image overlap.

Number of images:	149	Camera stations:	149
Flying altitude:	61.7 cm	Tie points:	150,341
Ground resolution:	0.0395 mm/pix	Projections:	459,107
Coverage area:	3.56 cm <sup>2</sup>	Reprojection error:	0.919 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

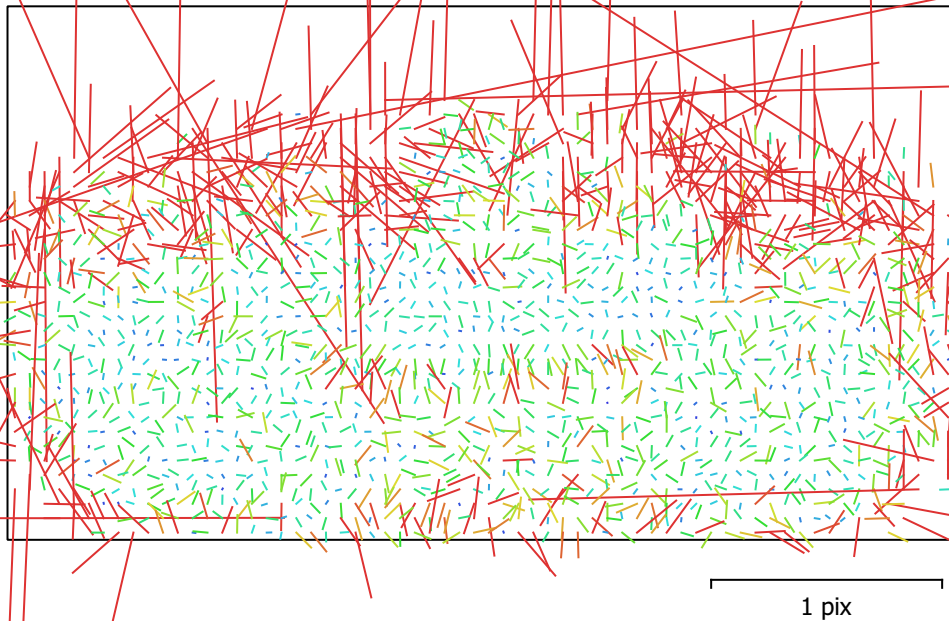


Fig. 2. Image residuals for DMC-G7 (60mm).

## DMC-G7 (60mm)

78 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>15937.9</b>	4.9	1.00	0.13	-0.50	-0.33	0.16	-0.09	0.13	0.20
<b>Cx</b>	<b>-82.7041</b>	7.9		1.00	-0.04	-0.13	0.08	-0.06	0.97	0.02
<b>Cy</b>	<b>-456.535</b>	9.9			1.00	-0.14	0.23	-0.27	-0.01	0.30
<b>K1</b>	<b>-0.280901</b>	0.012				1.00	-0.92	0.82	-0.13	-0.36
<b>K2</b>	<b>15.5707</b>	0.8					1.00	-0.97	0.10	0.17
<b>K3</b>	<b>-261.194</b>	18						1.00	-0.08	-0.11
<b>P1</b>	<b>-0.00104484</b>	0.00018							1.00	0.04
<b>P2</b>	<b>-0.00361331</b>	0.00021								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Calibration

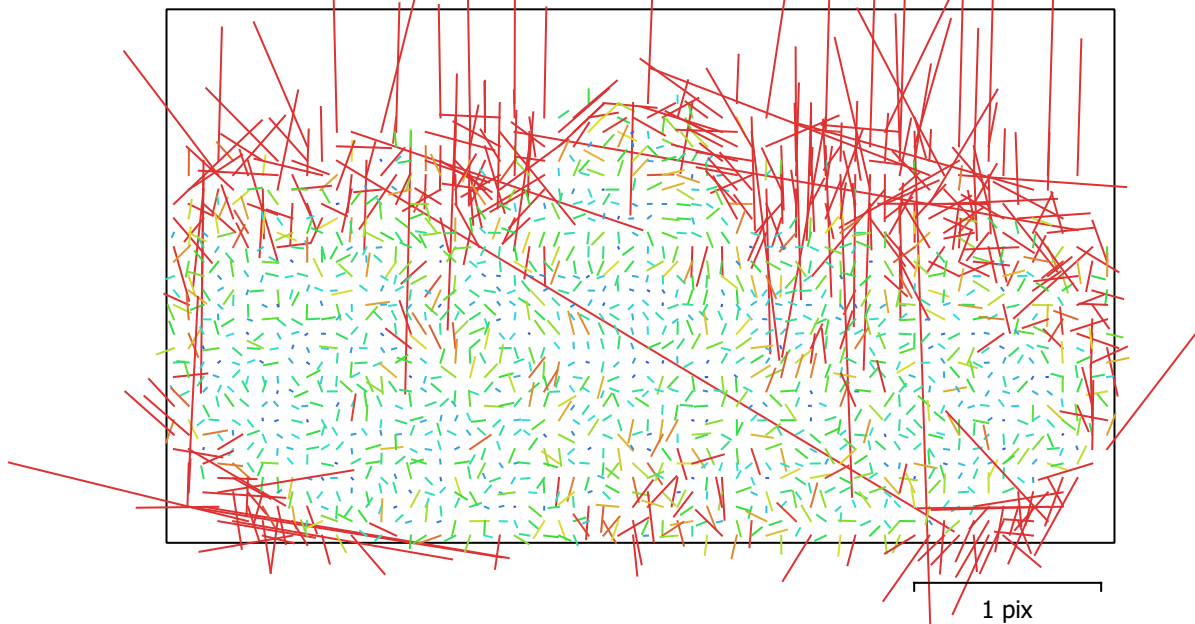


Fig. 3. Image residuals for DMC-G7 (60mm).

## DMC-G7 (60mm)

71 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>15580.7</b>	6.2	1.00	0.07	-0.51	-0.46	0.26	-0.18	-0.00	0.01
<b>Cx</b>	<b>102.116</b>	4.9		1.00	0.03	0.21	-0.31	0.38	0.93	0.06
<b>Cy</b>	<b>232.991</b>	7.8			1.00	0.18	-0.03	-0.04	0.08	0.36
<b>K1</b>	<b>-0.465501</b>	0.013				1.00	-0.92	0.82	0.22	-0.00
<b>K2</b>	<b>51.2438</b>	1.2					1.00	-0.97	-0.30	-0.05
<b>K3</b>	<b>-1269.16</b>	33						1.00	0.38	0.05
<b>P1</b>	<b>0.00529855</b>	0.00016							1.00	0.06
<b>P2</b>	<b>-0.00677718</b>	0.0002								1.00

Table 3. Calibration coefficients and correlation matrix.

# Scale Bars

Label	Distance (m)	Error (m)
target 15_target 16	0.0499809	-1.90872e-05
target 19_target 20	0.0500191	1.9072e-05
Total		1.90796e-05

Table 4. Control scale bars.

# Digital Elevation Model

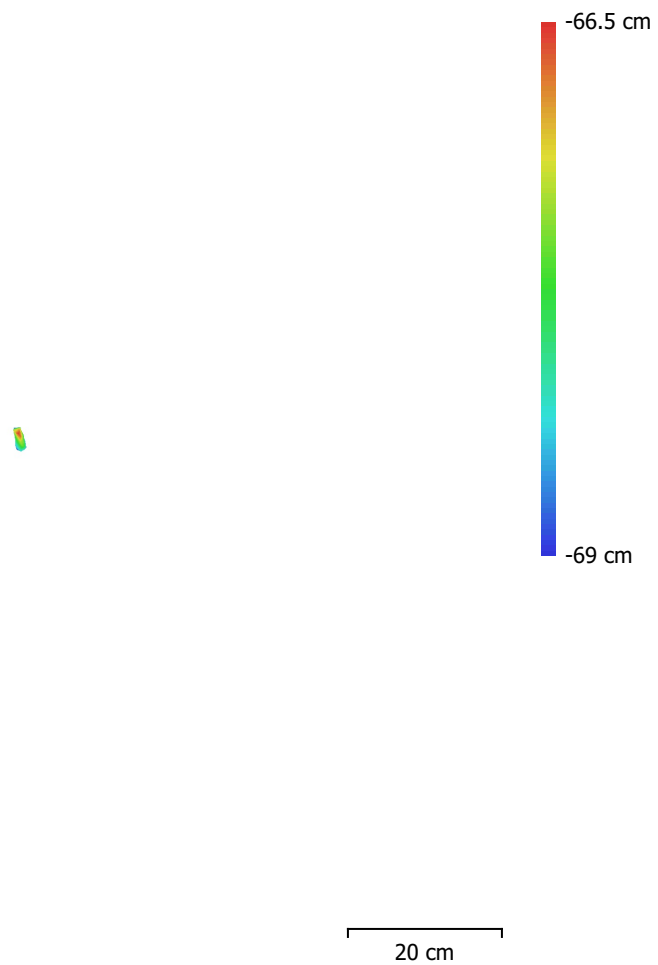


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.103 mm/pix  
Point density: 94 points/mm<sup>2</sup>

# Processing Parameters

## General

Cameras	149
Aligned cameras	149
Markers	8
Scale bars	2
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	150,341 of 188,277
RMS reprojection error	0.220948 (0.919328 pix)
Max reprojection error	0.712277 (52.8937 pix)
Mean key point size	3.2315 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.58387
File size	14.30 MB

## Depth Maps

Count	149
<b>Depth maps generation parameters</b>	
Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	7 minutes 40 seconds
Memory usage	5.91 GB
Date created	2024:05:29 15:56:06
Software version	1.8.4.14671
File size	60.57 MB

## Model

Faces	246,218
Vertices	123,111
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	15 seconds
UV mapping memory usage	672.29 MB
Blending time	1 minutes 22 seconds
Blending memory usage	13.25 GB
Blending GPU memory usage	11.90 GB
File size	180.46 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