

# **Agisoft Metashape**

**Processing Report**

**24 June 2024**

# Survey Data

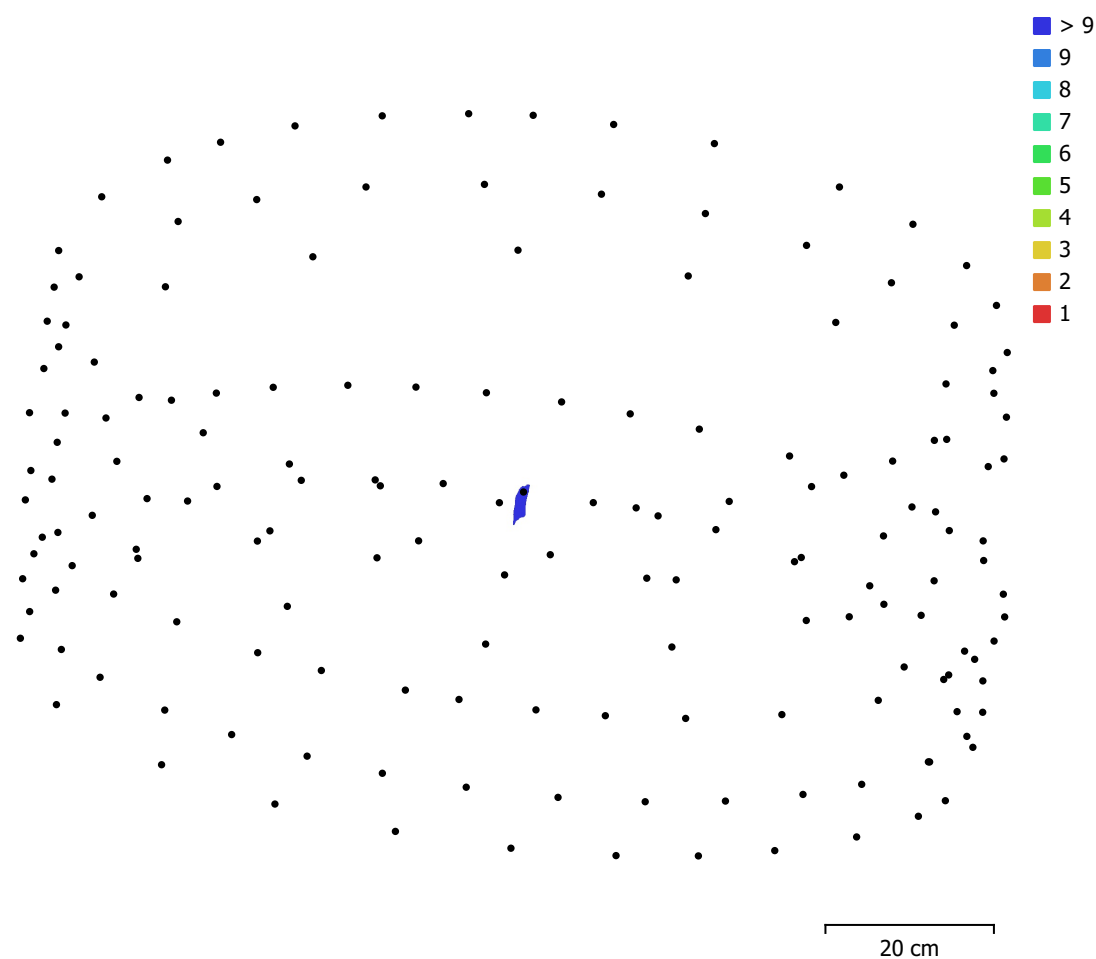


Fig. 1. Camera locations and image overlap.

Number of images:	167	Camera stations:	167
Flying altitude:	58.8 cm	Tie points:	61,128
Ground resolution:	0.0378 mm/pix	Projections:	147,258
Coverage area:	5.34 cm <sup>2</sup>	Reprojection error:	0.717 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

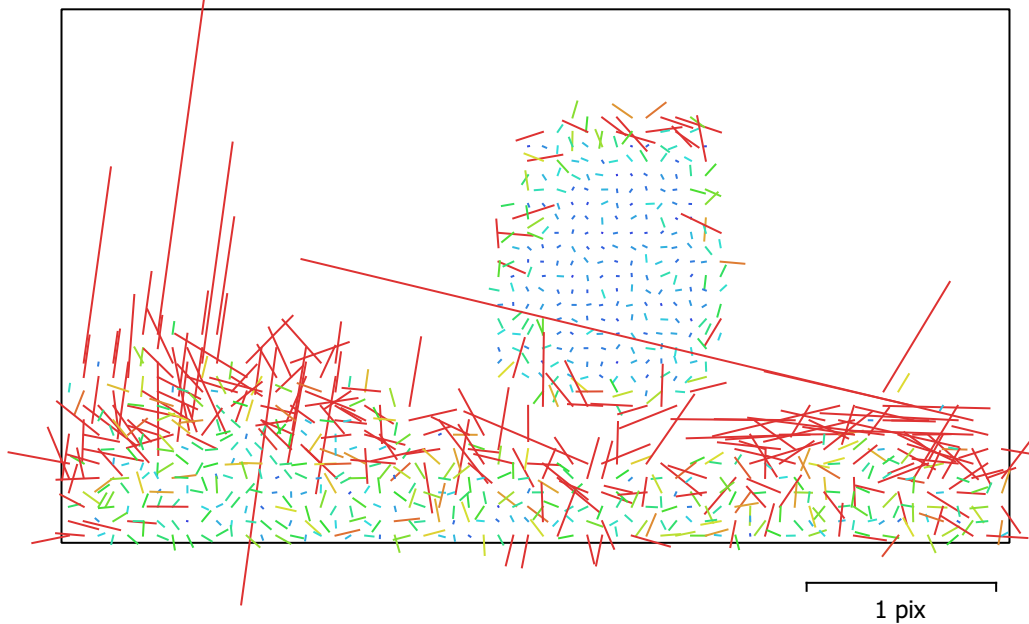


Fig. 2. Image residuals for DMC-G7 (60mm).

## DMC-G7 (60mm)

94 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>15622.2</b>	21	1.00	-0.28	-0.14	-0.07	0.06	-0.00	-0.21	-0.10
<b>Cx</b>	<b>135.456</b>	46		1.00	-0.14	0.03	0.26	-0.38	0.93	-0.30
<b>Cy</b>	<b>-146.804</b>	59			1.00	-0.24	-0.24	0.37	0.02	0.90
<b>K1</b>	<b>0.267256</b>	0.026				1.00	-0.79	0.63	-0.06	-0.34
<b>K2</b>	<b>-9.10866</b>	1.5					1.00	-0.97	0.28	-0.17
<b>K3</b>	<b>138.993</b>	30						1.00	-0.35	0.33
<b>P1</b>	<b>0.00303571</b>	0.0012							1.00	-0.15
<b>P2</b>	<b>-0.00869916</b>	0.0019								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Calibration

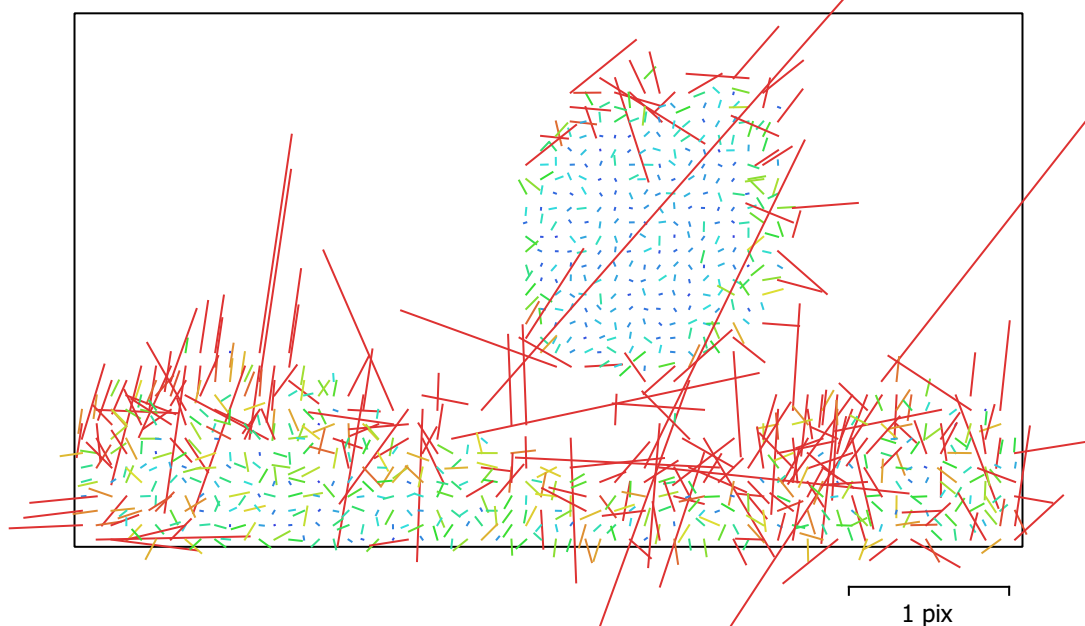


Fig. 3. Image residuals for DMC-G7 (60mm).

## DMC-G7 (60mm)

73 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	15510.6	24	1.00	-0.11	-0.38	-0.17	0.08	-0.04	-0.05	-0.11
Cx	-98.9225	45		1.00	0.04	0.22	-0.21	0.22	0.83	0.17
Cy	-52.1255	51			1.00	0.07	-0.15	0.12	0.18	0.77
K1	0.205471	0.032				1.00	-0.92	0.85	0.16	0.16
K2	-10.791	2.6					1.00	-0.98	-0.23	-0.28
K3	142.894	61						1.00	0.22	0.27
P1	0.00540473	0.00079							1.00	0.24
P2	-0.0056701	0.0012								1.00

Table 3. Calibration coefficients and correlation matrix.

# Scale Bars

Label	Distance (m)	Error (m)
target 15_target 16	0.0502318	0.000231806
target 19_target 20	0.0497527	-0.000247288
Total		<b>0.000239672</b>

Table 4. Control scale bars.

# Digital Elevation Model

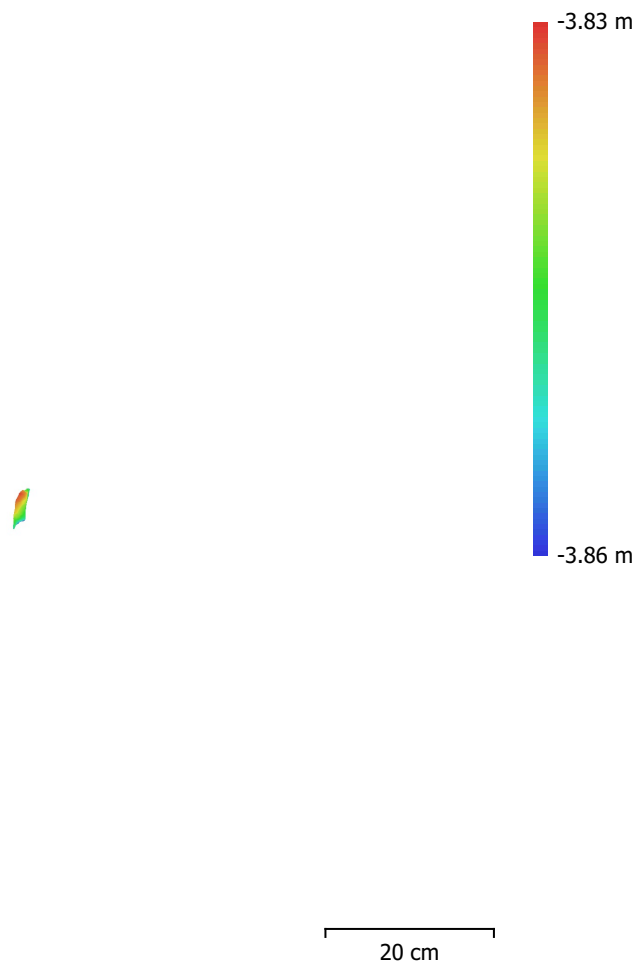


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.0964 mm/pix  
Point density: 108 points/mm<sup>2</sup>

# Processing Parameters

## General

Cameras	167
Aligned cameras	167
Markers	8
Scale bars	2
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	61,128 of 92,506
RMS reprojection error	0.185162 (0.717137 pix)
Max reprojection error	0.575992 (32.3744 pix)
Mean key point size	3.12859 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.85078
File size	5.71 MB

## Depth Maps

Count	167
<b>Depth maps generation parameters</b>	
Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	6 minutes 34 seconds
Memory usage	4.12 GB
Date created	2024:05:29 16:37:32
Software version	1.8.4.14671
File size	147.84 MB

## Model

Faces	476,690
Vertices	238,347
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	27 seconds
UV mapping memory usage	717.98 MB
Blending time	1 minutes 25 seconds
Blending memory usage	12.95 GB
Blending GPU memory usage	11.91 GB
File size	192.33 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