

# Agisoft Metashape

Processing Report

24 June 2024



# Survey Data

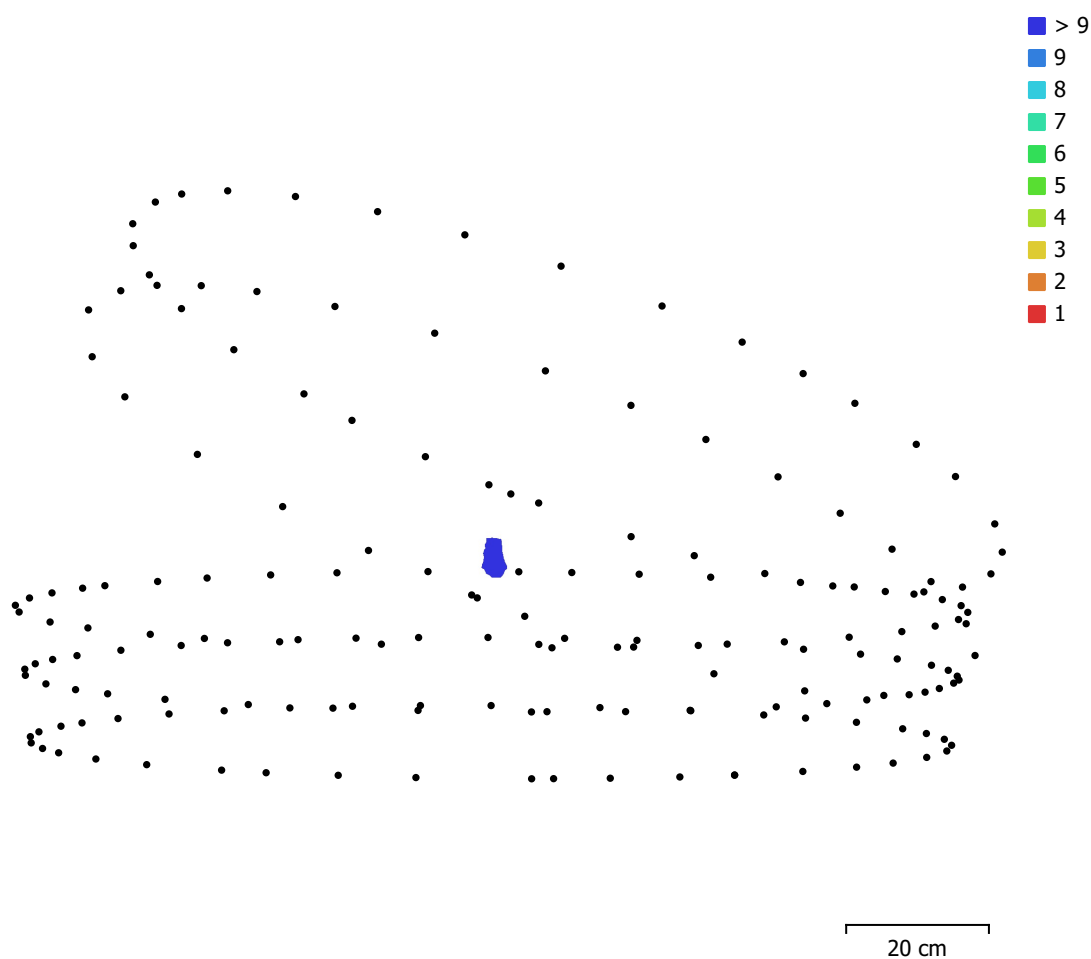


Fig. 1. Camera locations and image overlap.

Number of images:	178	Camera stations:	178
Flying altitude:	65.6 cm	Tie points:	162,272
Ground resolution:	0.0421 mm/pix	Projections:	579,442
Coverage area:	14.6 cm <sup>2</sup>	Reprojection error:	0.791 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

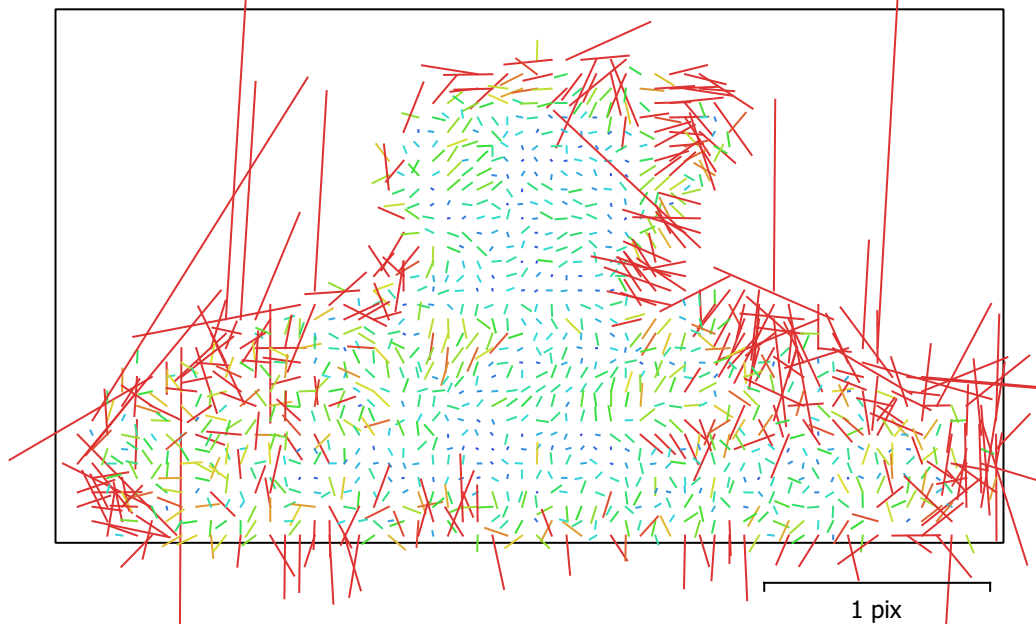


Fig. 2. Image residuals for DMC-G7 (60mm).

## DMC-G7 (60mm)

114 images

Type	Resolution	Focal Length	Pixel Size
Frame	<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>15541.6</b>	5.2	1.00	0.03	-0.28	-0.18	0.10	-0.05	-0.00	-0.02
<b>Cx</b>	<b>195.514</b>	5.1		1.00	-0.06	0.04	0.03	-0.02	0.95	-0.10
<b>Cy</b>	<b>-554.331</b>	8.4			1.00	0.14	-0.57	0.59	-0.03	0.82
<b>K1</b>	<b>0.530388</b>	0.0063				1.00	-0.79	0.67	0.10	-0.13
<b>K2</b>	<b>-18.4557</b>	0.46					1.00	-0.98	-0.00	-0.42
<b>K3</b>	<b>225.399</b>	9.7						1.00	0.01	0.49
<b>P1</b>	<b>0.00594048</b>	0.00014							1.00	-0.12
<b>P2</b>	<b>-0.0163269</b>	0.00032								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Calibration

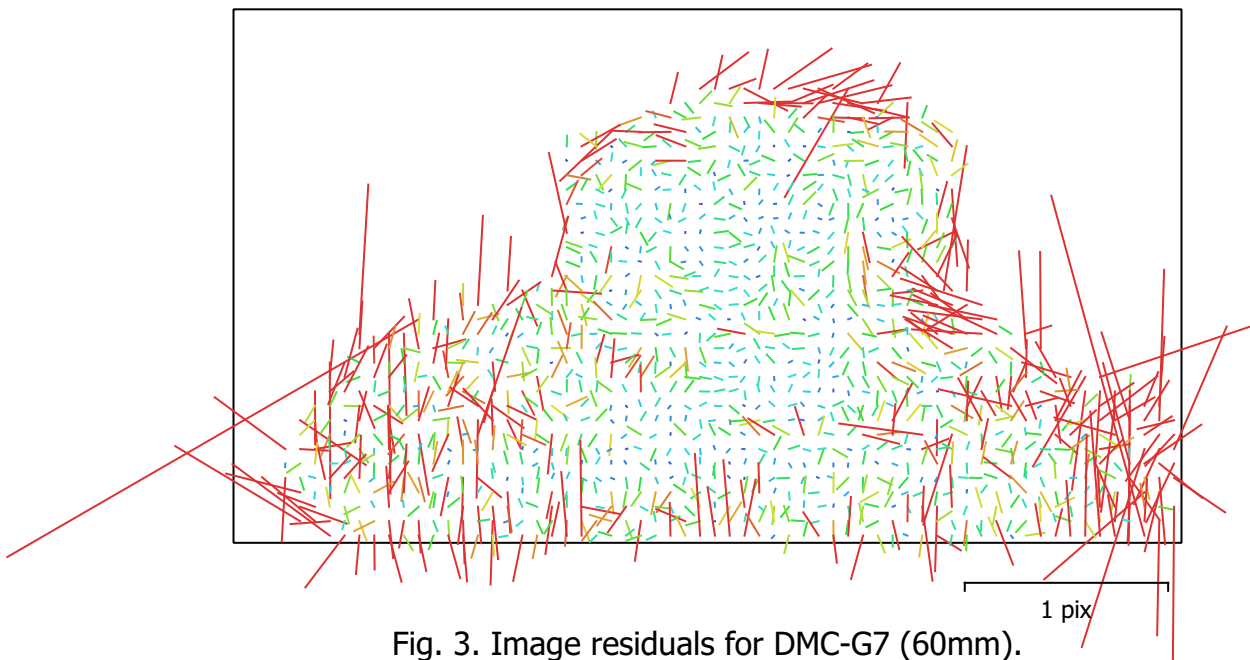


Fig. 3. Image residuals for DMC-G7 (60mm).

## DMC-G7 (60mm)

64 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>15656</b>	7.2	1.00	0.34	-0.58	-0.22	0.27	-0.25	0.30	-0.40
<b>Cx</b>	<b>293.509</b>	12		1.00	-0.33	-0.13	0.28	-0.28	0.98	-0.35
<b>Cy</b>	<b>-42.129</b>	13			1.00	0.18	-0.47	0.49	-0.25	0.85
<b>K1</b>	<b>0.266339</b>	0.0069				1.00	-0.83	0.73	-0.09	0.12
<b>K2</b>	<b>-14.966</b>	0.86					1.00	-0.98	0.24	-0.48
<b>K3</b>	<b>306.723</b>	26						1.00	-0.23	0.50
<b>P1</b>	<b>0.00900562</b>	0.00031							1.00	-0.30
<b>P2</b>	<b>0.000538373</b>	0.00032								1.00

Table 3. Calibration coefficients and correlation matrix.

# Scale Bars

Label	Distance (m)	Error (m)
target 19_target 20	0.05	-1.48492e-15
Total		<b>1.48492e-15</b>

Table 4. Control scale bars.

# Digital Elevation Model

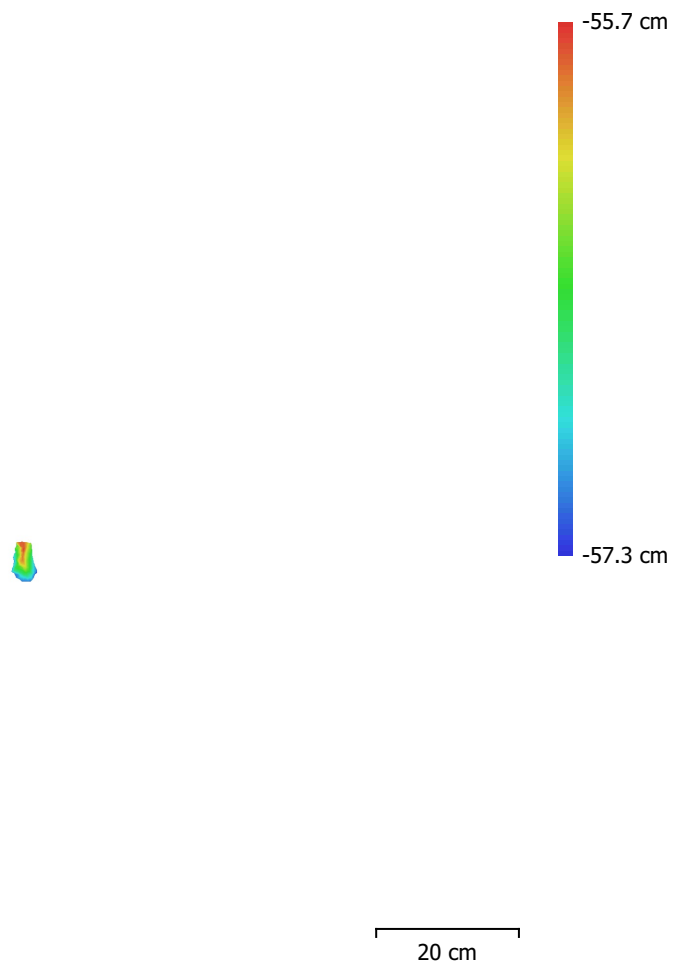


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.145 mm/pix  
Point density: 47.6 points/mm<sup>2</sup>

# Processing Parameters

## General

Cameras	178
Aligned cameras	178
Markers	8
Scale bars	1
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	162,272 of 197,459
RMS reprojection error	0.235231 (0.791411 pix)
Max reprojection error	0.727955 (33.974 pix)
Mean key point size	3.08966 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	4.29103
File size	17.23 MB

## Depth Maps

Count	177
<b>Depth maps generation parameters</b>	
Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	11 minutes 12 seconds
Memory usage	6.74 GB
Date created	2024:05:24 15:05:41
Software version	1.8.4.14671
File size	130.86 MB

## Model

Faces	147,954
Vertices	73,979
Vertex colors	3 bands, uint8
Texture	16,000 x 16,000 x 2, 4 bands, uint8

## Depth maps generation parameters

Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	11 minutes 12 seconds
Memory usage	6.74 GB

## Reconstruction parameters

Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	1 minutes 29 seconds
Memory usage	11.67 GB

## Texturing parameters

Mapping mode	Generic
Blending mode	Mosaic
Texture size	16,000
Enable hole filling	Yes

Enable ghosting filter	Yes
UV mapping time	26 seconds
UV mapping memory usage	728.20 MB
Blending time	1 minutes 21 seconds
Blending memory usage	13.08 GB
Blending GPU memory usage	11.89 GB
Date created	2024:05:24 15:07:11
Software version	1.8.4.14671
File size	153.55 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