

# Agisoft Metashape

Processing Report

24 June 2024



# Survey Data

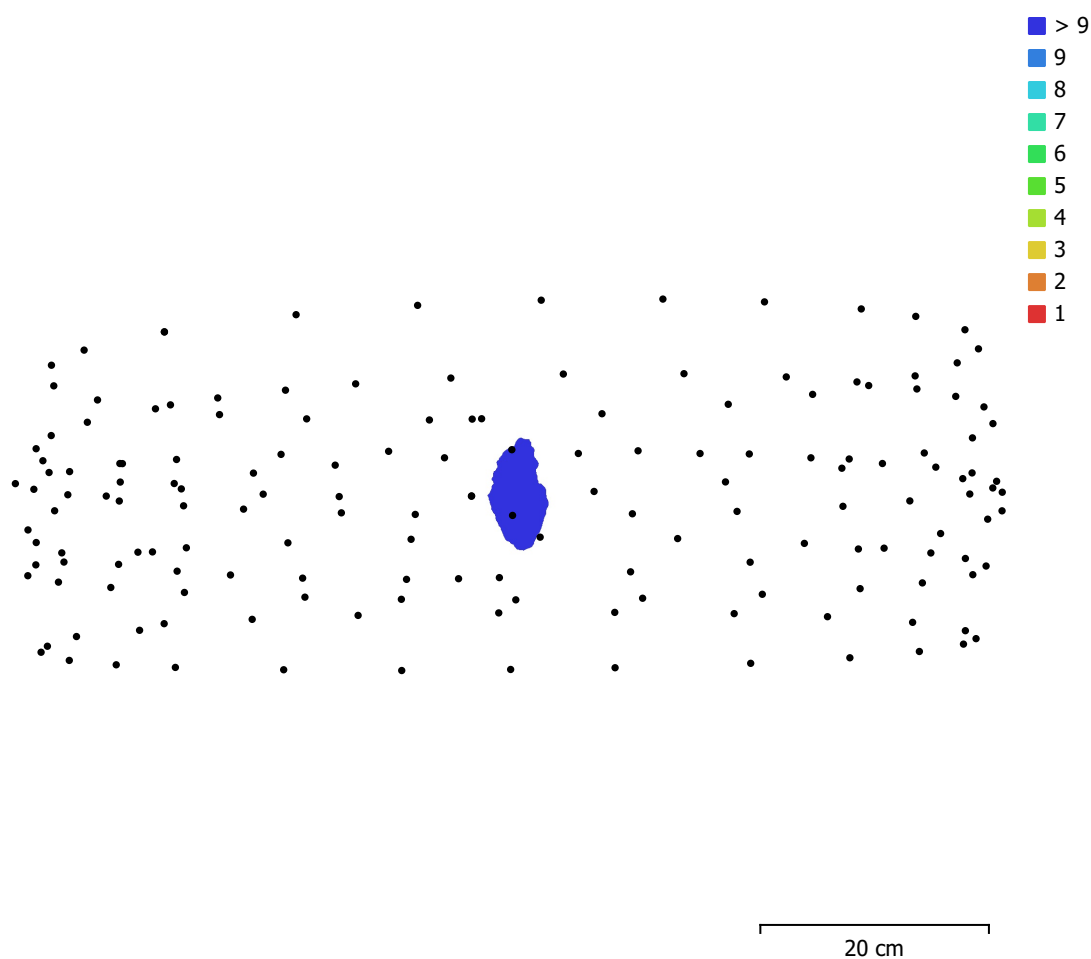


Fig. 1. Camera locations and image overlap.

Number of images:	163	Camera stations:	163
Flying altitude:	40.7 cm	Tie points:	171,596
Ground resolution:	0.0569 mm/pix	Projections:	544,034
Coverage area:	34.5 cm <sup>2</sup>	Reprojection error:	0.911 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
DMC-G7 (25mm)	4592 x 2584	25 mm	3.8 x 3.8 μm	No
DMC-G7 (25mm)	4592 x 2584	25 mm	3.8 x 3.8 μm	No

Table 1. Cameras.

# Camera Calibration

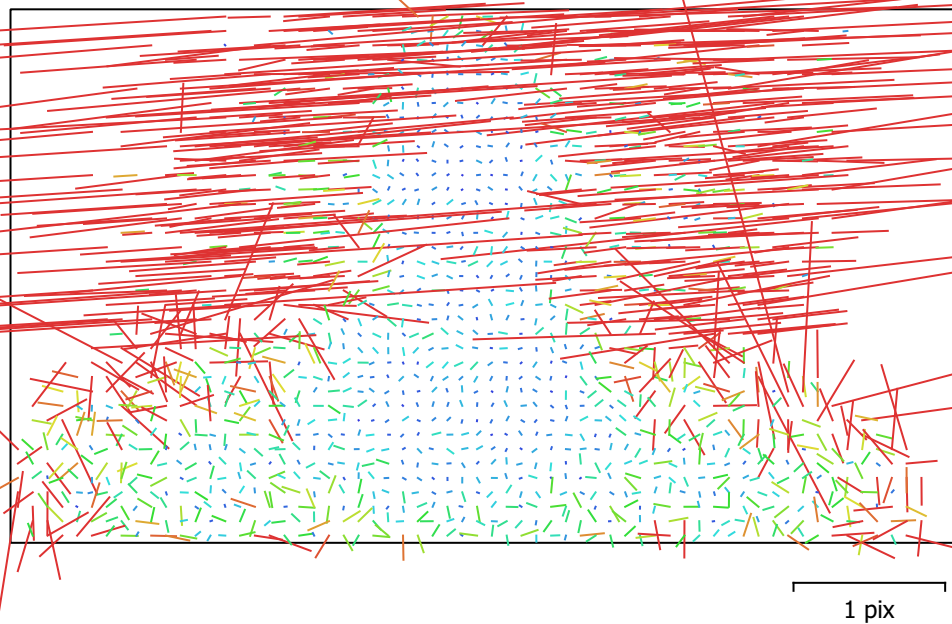


Fig. 2. Image residuals for DMC-G7 (25mm).

## DMC-G7 (25mm)

84 images

Type	Resolution	Focal Length	Pixel Size
<b>Frame</b>	<b>4592 x 2584</b>	<b>25 mm</b>	<b>3.8 x 3.8 <math>\mu\text{m}</math></b>

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>7157.52</b>	1.2	1.00	-0.01	-0.42	-0.08	0.15	-0.12	-0.01	-0.43
<b>Cx</b>	<b>-61.0522</b>	4.3		1.00	0.06	-0.01	-0.05	0.06	0.99	0.09
<b>Cy</b>	<b>11.0501</b>	4.1			1.00	0.04	-0.16	0.16	0.05	0.93
<b>K1</b>	<b>0.0612728</b>	0.0015				1.00	-0.89	0.79	-0.01	0.04
<b>K2</b>	<b>-0.362836</b>	0.037					1.00	-0.97	-0.04	-0.17
<b>K3</b>	<b>1.84942</b>	0.24						1.00	0.05	0.18
<b>P1</b>	<b>-0.00261675</b>	0.00022							1.00	0.08
<b>P2</b>	<b>-0.00225768</b>	0.00019								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Calibration

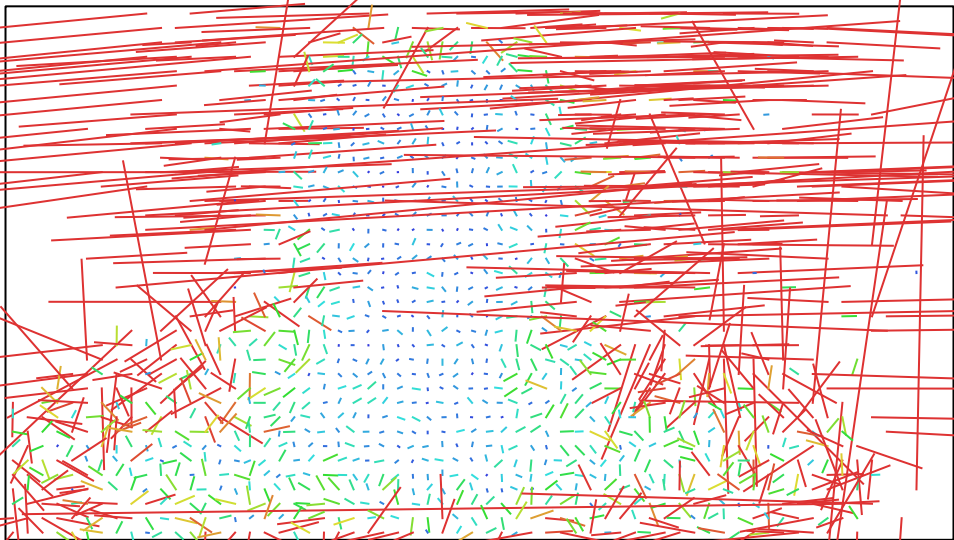


Fig. 3. Image residuals for DMC-G7 (25mm).

## DMC-G7 (25mm)

79 images

Type	Resolution	Focal Length	Pixel Size
Frame	4592 x 2584	25 mm	3.8 x 3.8 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	7186.04	2.2	1.00	-0.12	-0.27	-0.12	0.09	-0.04	-0.15	-0.30
Cx	-70.2976	6.5		1.00	0.08	-0.03	0.14	-0.28	0.97	0.05
Cy	145.834	6.2			1.00	0.08	-0.23	0.25	0.04	0.85
K1	0.0640302	0.0026				1.00	-0.87	0.75	-0.02	0.12
K2	-1.03719	0.064					1.00	-0.96	0.17	-0.24
K3	8.32655	0.43						1.00	-0.31	0.26
P1	-0.00332446	0.00033							1.00	0.02
P2	-0.000630702	0.00026								1.00

Table 3. Calibration coefficients and correlation matrix.

# Scale Bars

Label	Distance (m)	Error (m)
target 65_point 1	0.15	6.66134e-14
Total		<b>6.66134e-14</b>

Table 4. Control scale bars.

# Digital Elevation Model

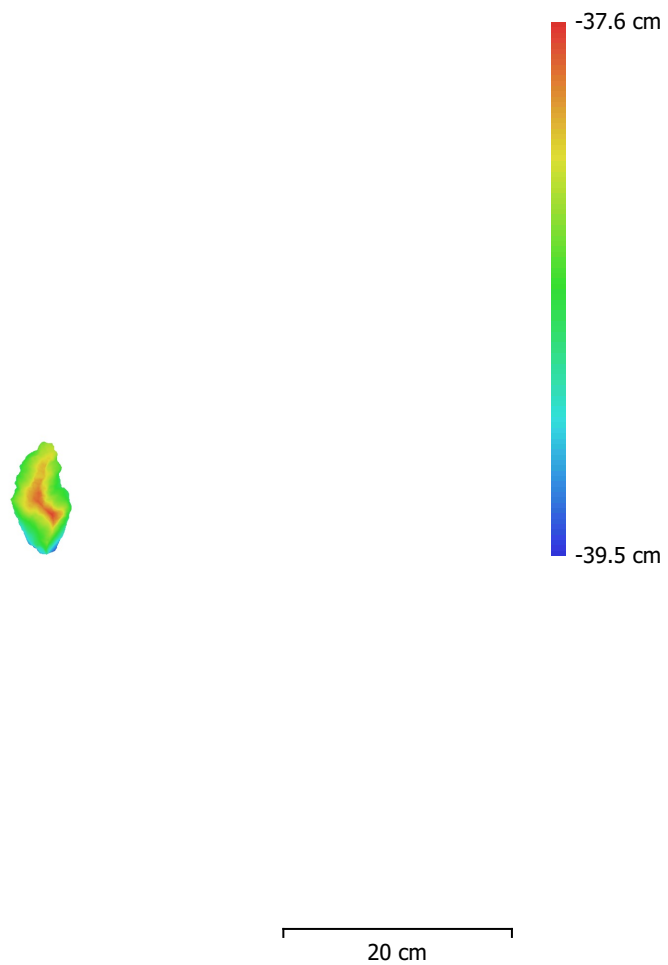


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.17 mm/pix  
Point density: 34.6 points/mm<sup>2</sup>

# Processing Parameters

## General

Cameras	163
Aligned cameras	163
Markers	4
Scale bars	1
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	171,596 of 232,298
RMS reprojection error	0.250905 (0.911404 pix)
Max reprojection error	0.885193 (35.0905 pix)
Mean key point size	3.16791 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.38183
File size	16.60 MB

## Depth Maps

Count	163
<b>Depth maps generation parameters</b>	
Quality	Ultra High
Filtering mode	Moderate
Max neighbors	16
Processing time	9 minutes 26 seconds
Memory usage	7.60 GB
Date created	2024:06:15 11:10:59
Software version	1.8.4.14671
File size	165.13 MB

## Model

Faces	262,446
Vertices	131,225
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	Moderate
Max neighbors	16
Processing time	9 minutes 26 seconds
Memory usage	7.60 GB

## Reconstruction parameters

Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	1 minutes 55 seconds
Memory usage	8.14 GB

## Texturing parameters

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

Enable ghosting filter	Yes
UV mapping time	30 seconds
UV mapping memory usage	757.02 MB
Blending time	1 minutes 22 seconds
Blending memory usage	13.30 GB
Blending GPU memory usage	11.90 GB
Date created	2024:06:15 11:12:55
Software version	1.8.4.14671
File size	165.83 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