Agisoft Metashape

Processing Report
24 June 2024

# Survey Data
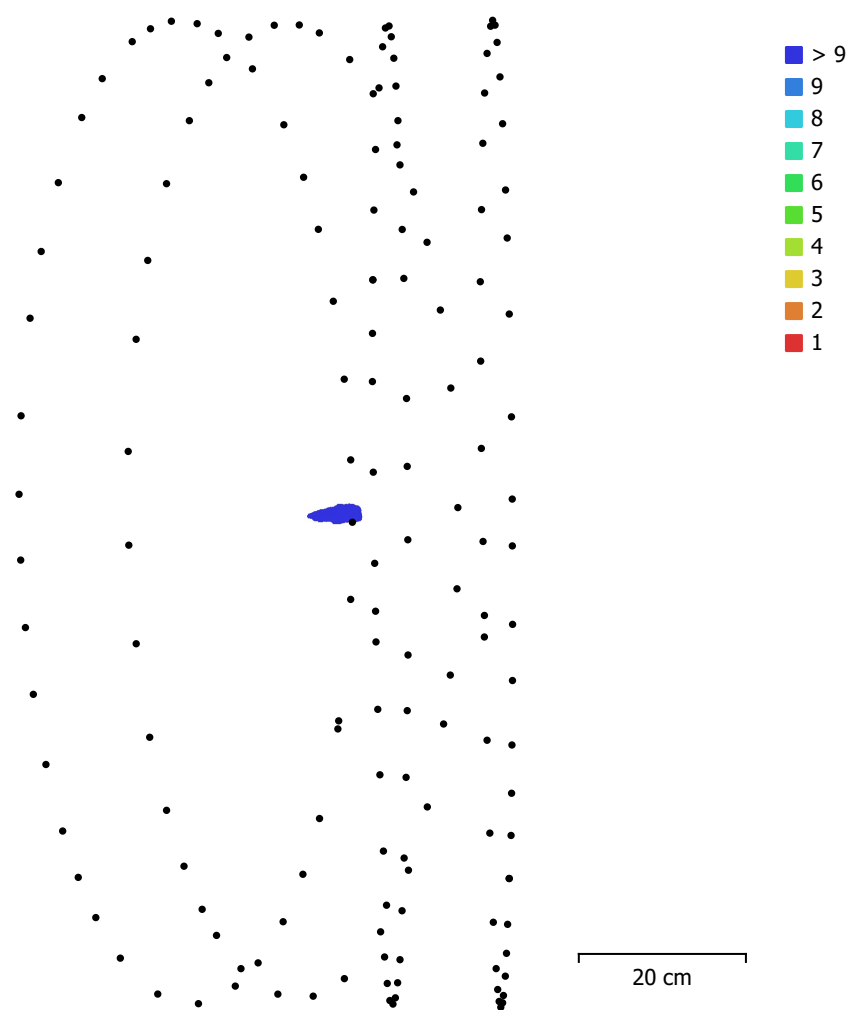
Fig. 1. Camera locations and image overlap.

Number of images:	155	Camera stations:	155
Flying altitude:	57.9 cm	Tie points:	112,909
Ground resolution:	0.0369 mm/pix	Projections:	380,336
Coverage area:	11.5 cm²	Reprojection error:	0.708 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
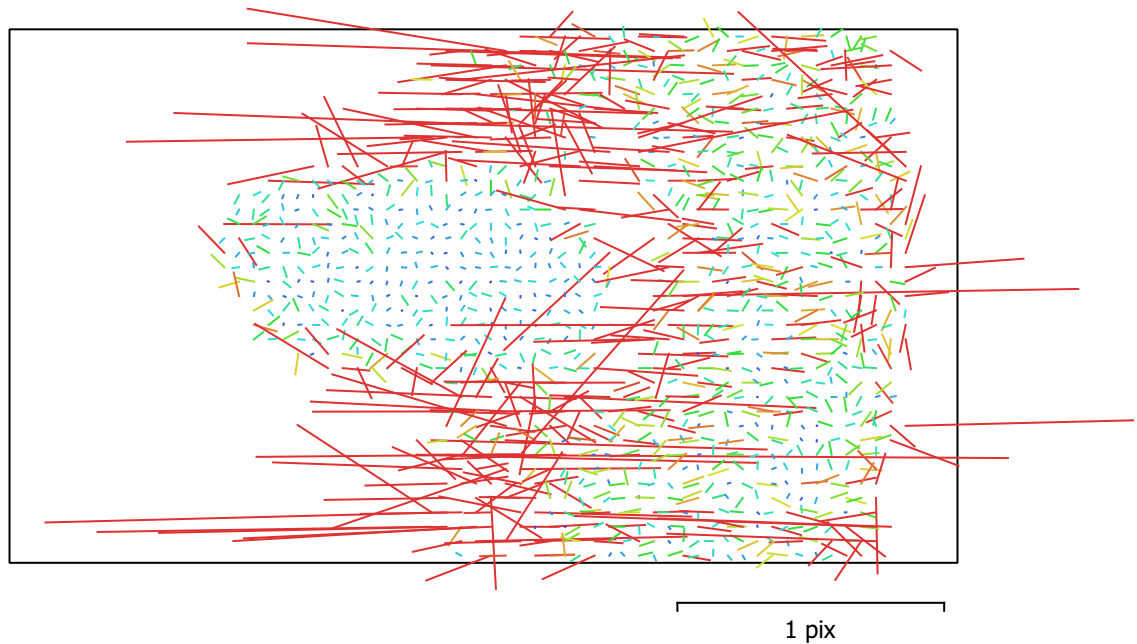
Fig. 2. Image residuals for DMC-G7 (60mm).

DMC-G7 (60mm)

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	**15670.7**	6.5	1.00	-0.36	-0.14	0.23	-0.18	0.16	-0.43	-0.08
Cx	**-141.139**	16		1.00	0.33	0.08	-0.01	-0.15	0.62	0.23
Cy	**-304.903**	16			1.00	-0.17	0.26	-0.37	0.15	0.98
K1	**-0.000845722**	0.011				1.00	-0.88	0.73	0.02	-0.21
K2	**6.94807**	0.85					1.00	-0.95	-0.13	0.28
K3	**-182.55**	21						1.00	0.04	-0.37
P1	**0.000660589**	0.00035							1.00	0.09
P2	**-0.00996357**	0.00045								1.00

Table 2. Calibration coefficients and correlation matrix.

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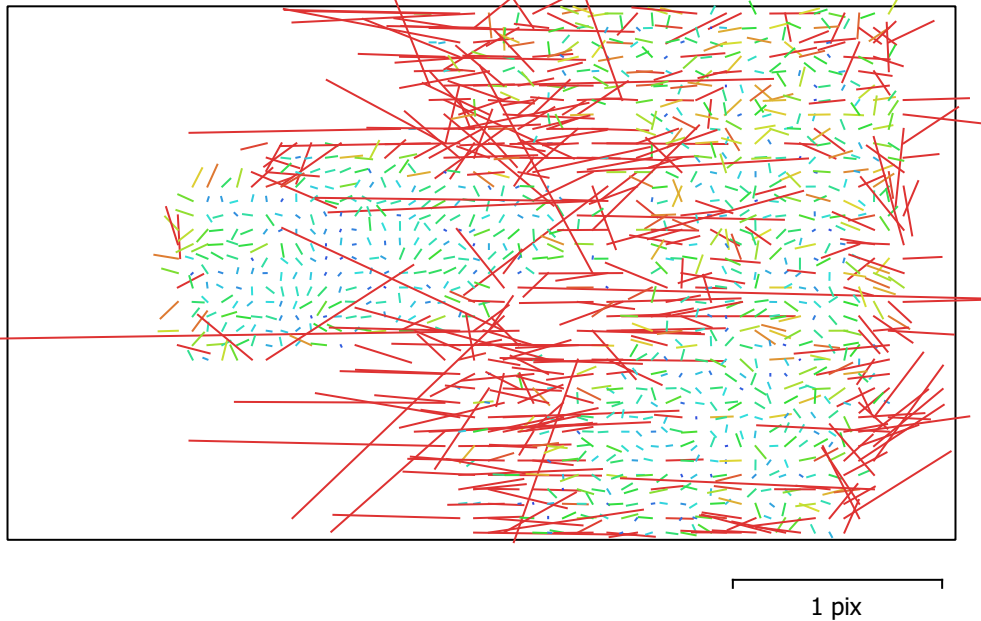
Fig. 3. Image residuals for DMC-G7 (60mm).

DMC-G7 (60mm)

81 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	**15704.5**	9.6	1.00	-0.34	0.23	-0.06	-0.19	0.17	-0.09	-0.16
Cx	**75.4725**	15		1.00	-0.07	-0.19	0.23	-0.17	0.32	-0.08
Cy	**1114.59**	20			1.00	0.24	-0.45	0.38	-0.03	0.73
K1	**-0.248024**	0.008				1.00	-0.89	0.84	0.16	0.44
K2	**5.9809**	0.43					1.00	-0.98	-0.10	-0.35
K3	**-43.4824**	6.5						1.00	0.10	0.27
P1	**-0.00510542**	0.00017							1.00	0.16
P2	**0.00695771**	0.00039								1.00

Table 3. Calibration coefficients and correlation matrix.

Scale Bars

Label	Distance (m)	Error (m)
target 15_target 16	0.0499758	-2.42221e-05
target 19_target 20	0.0500242	2.41997e-05
Total		**2.42109e-05**

Table 4. Control scale bars.

Digital Elevation Model
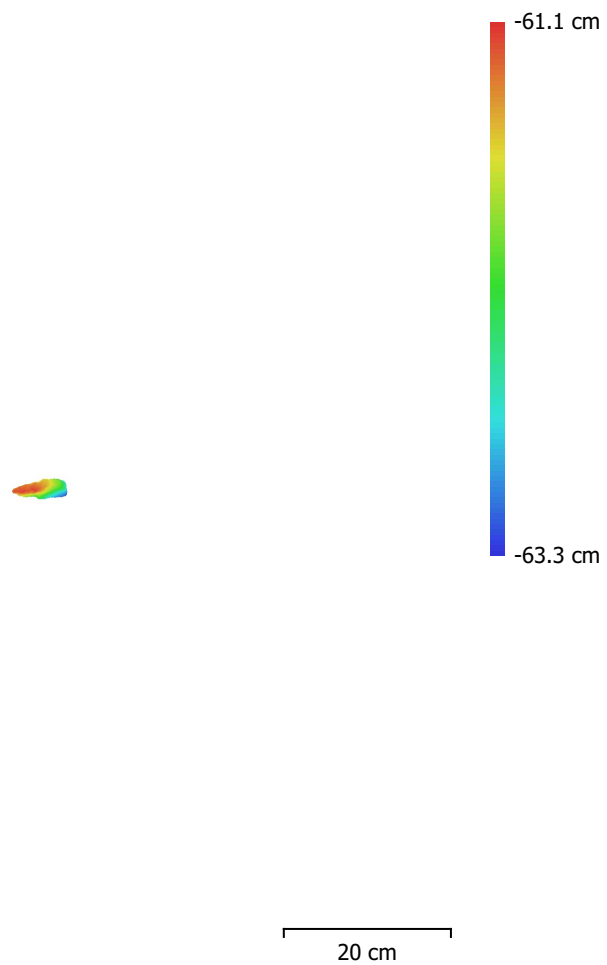
Fig. 4. Reconstructed digital elevation model.

Resolution:	0.0915 mm/pix
Point density:	120 points/mm²

Processing Parameters

General

Cameras	155
Aligned cameras	155
Markers	8
Scale bars	2
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	112,909 of 151,038
RMS reprojection error	0.209735 (0.707588 pix)
Max reprojection error	0.675459 (49.9581 pix)
Mean key point size	2.89616 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.92595
File size	12.08 MB

Depth Maps

Count	155
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	9 minutes 44 seconds
Memory usage	5.74 GB
Date created	2024:05:29 13:12:19
Software version	1.8.4.14671
File size	129.01 MB

Model

Faces	499,774
Vertices	249,891
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	26 seconds
UV mapping memory usage	804.28 MB
Blending time	1 minutes 20 seconds
Blending memory usage	12.55 GB
Blending GPU memory usage	11.91 GB
File size	178.22 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