Agisoft Metashape

Processing Report
24 June 2024

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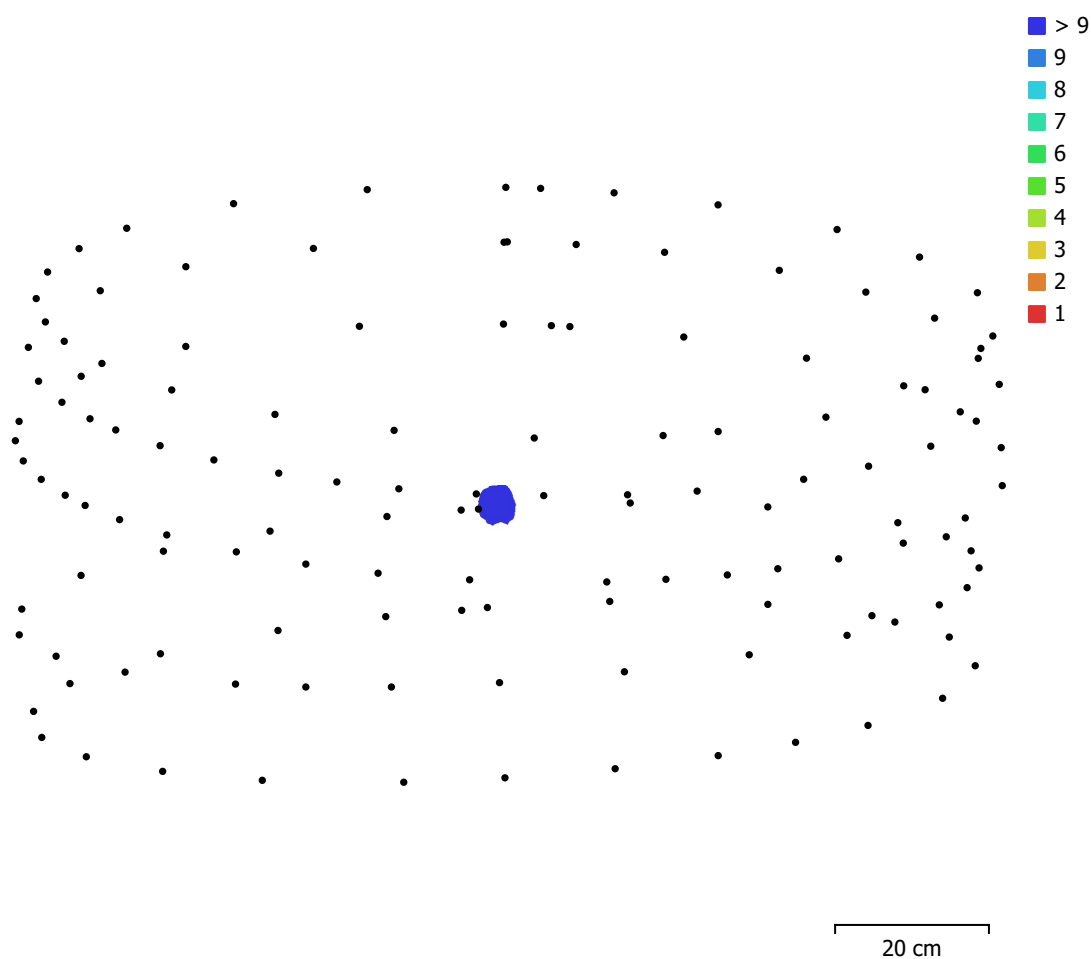
Fig. 1. Camera locations and image overlap.

Number of images:	136
Flying altitude:	63.7 cm
Ground resolution:	0.0405 mm/pix
Coverage area:	20.6 cm²

Camera stations:	136
Tie points:	83,818
Projections:	313,176
Reprojection error:	0.645 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
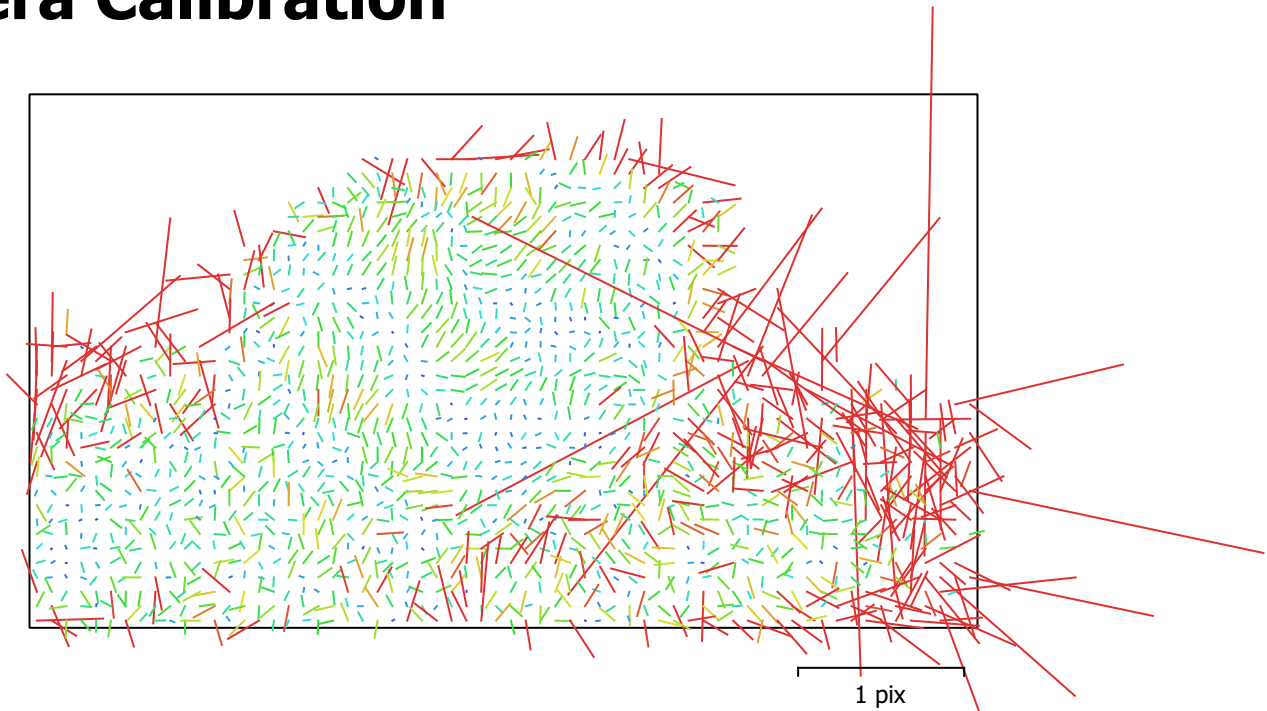
Fig. 2. Image residuals for DMC-G7 (60mm).

DMC-G7 (60mm)

87 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	**15789.1**	5.5	1.00	0.20	-0.30	0.15	-0.08	0.10	0.21	-0.18
Cx	**592.114**	9		1.00	-0.16	0.14	0.26	-0.23	0.94	-0.30
Cy	**154.929**	6.3			1.00	-0.06	-0.12	0.14	-0.11	0.88
K1	**0.330362**	0.0039				1.00	-0.75	0.67	0.28	-0.03
K2	**-7.28445**	0.26					1.00	-0.97	0.23	-0.19
K3	**60.9342**	5						1.00	-0.20	0.19
P1	**0.0193629**	0.00032							1.00	-0.24
P2	**3.87883e-05**	0.00017								1.00

Table 2. Calibration coefficients and correlation matrix.

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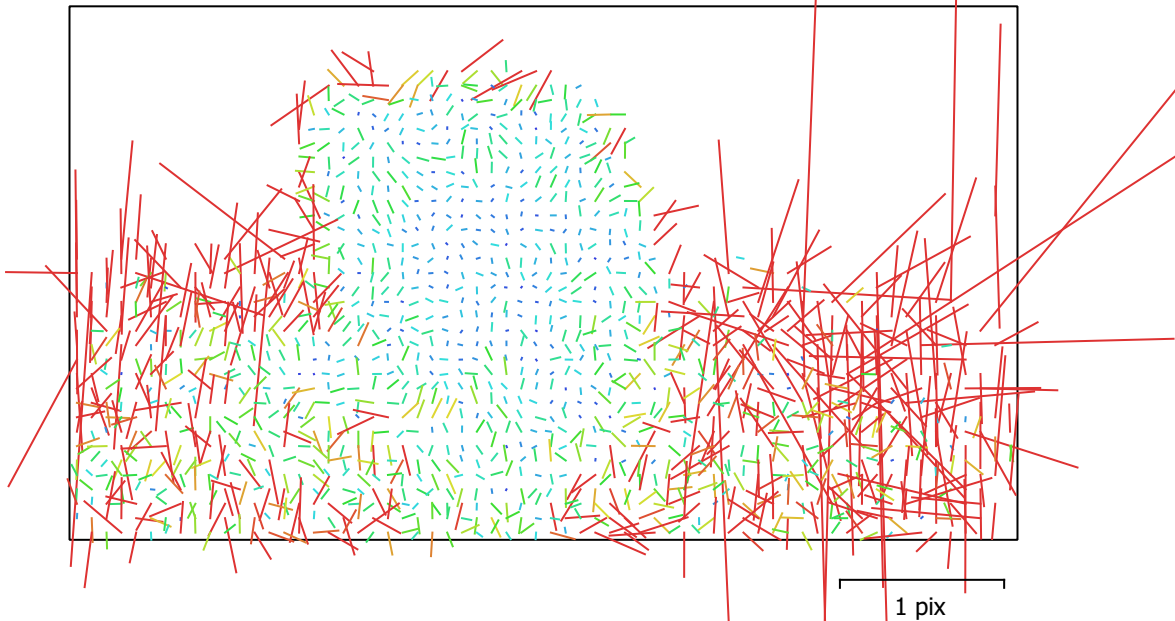
Fig. 3. Image residuals for DMC-G7 (60mm).

DMC-G7 (60mm)

49 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	**15561.5**	5.3	1.00	0.19	-0.49	-0.02	-0.04	0.11	0.15	-0.33
Cx	**218.897**	14		1.00	-0.18	0.05	-0.01	0.10	0.94	-0.15
Cy	**52.4308**	12			1.00	-0.03	-0.06	-0.02	-0.16	0.89
K1	**0.0667218**	0.0045				1.00	-0.85	0.78	0.13	0.03
K2	**-3.02115**	0.44					1.00	-0.97	0.01	-0.15
K3	**-9.82609**	11						1.00	0.09	0.07
P1	**0.00347577**	0.00027							1.00	-0.15
P2	**-0.00391206**	0.0002								1.00

Table 3. Calibration coefficients and correlation matrix.

Scale Bars

Label	Distance (m)	Error (m)
target 15_target 16	0.0499514	-4.85793e-05
target 19_target 20	0.0500485	4.85112e-05
Total		**4.85453e-05**

Table 4. Control scale bars.

Digital Elevation Model

-62.7 cm

-64.4 cm

20 cm
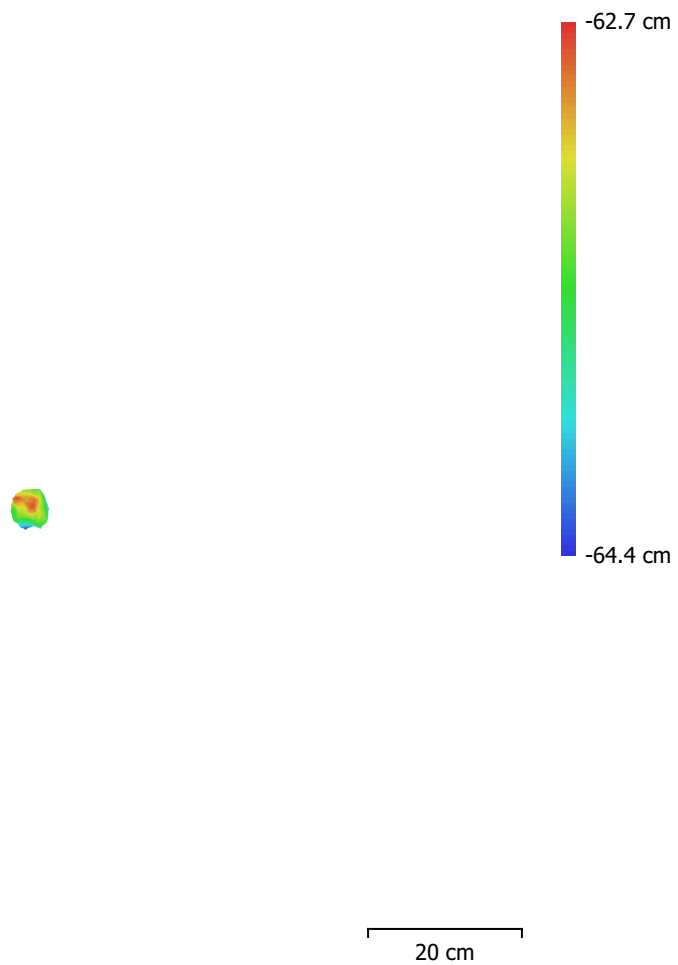
Fig. 4. Reconstructed digital elevation model.

Resolution: 0.143 mm/pix
Point density: 49.1 points/mm²

Processing Parameters

General

Cameras	136
Aligned cameras	136
Markers	8
Scale bars	2
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	83,818 of 124,162
RMS reprojection error	0.177987 (0.644738 pix)
Max reprojection error	0.576396 (30.1411 pix)
Mean key point size	2.90153 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	4.16511
File size	10.18 MB

Depth Maps

Count	136

    Depth maps generation parameters

Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	8 minutes 14 seconds
Memory usage	7.20 GB
Date created	2024:06:01 13:54:23
Software version	1.8.4.14671
File size	122.63 MB

Model

Faces	230,990
Vertices	115,497
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	8 minutes 14 seconds
Memory usage	7.20 GB

    Reconstruction parameters

Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	1 minutes 31 seconds
Memory usage	8.53 GB

    Texturing parameters

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

Enable ghosting filter	Yes
UV mapping time	25 seconds
UV mapping memory usage	690.89 MB
Blending time	1 minutes 17 seconds
Blending memory usage	14.15 GB
Blending GPU memory usage	11.90 GB
Date created	2024:06:01 13:55:54
Software version	1.8.4.14671
File size	181.29 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