Agisoft Metashape

Processing Report
24 May 2024

Survey Data

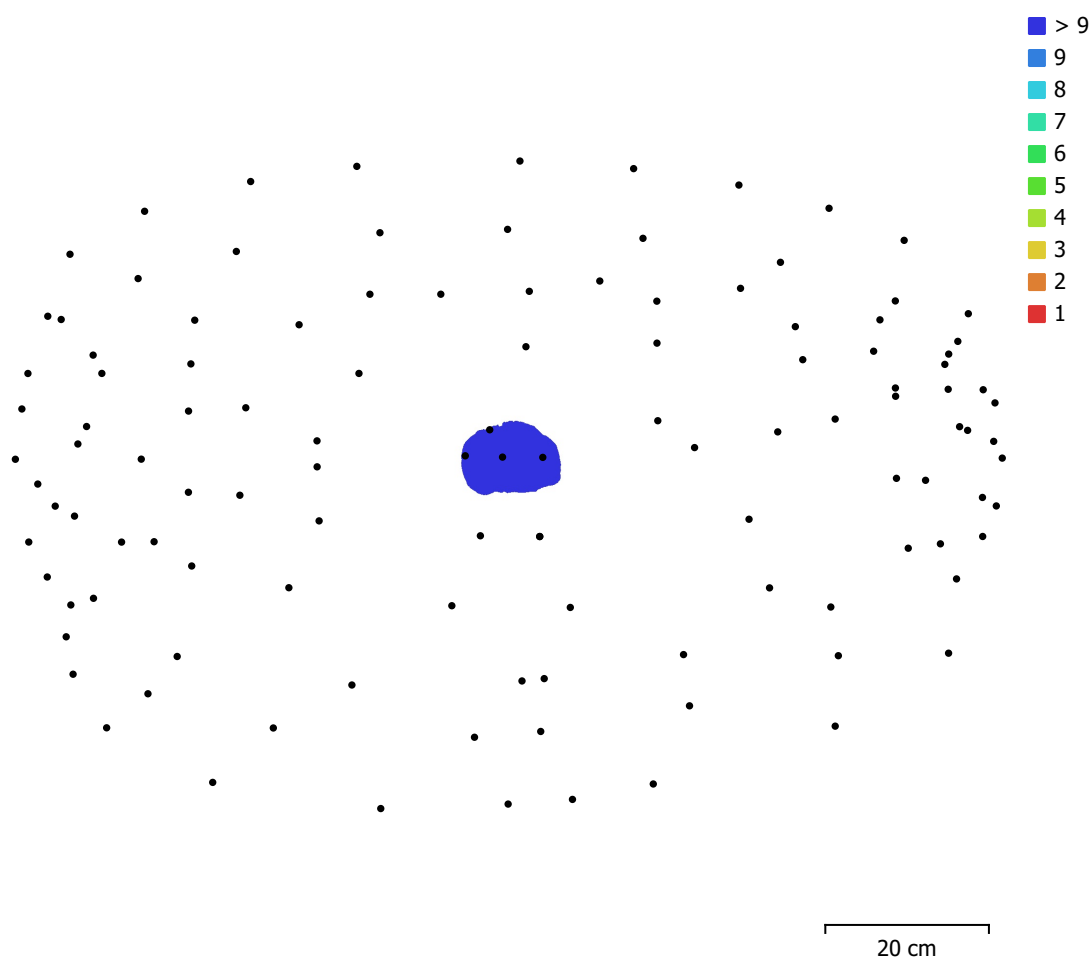
■	> 9
■	9
■	8
■	7
■	6
■	5
■	4
■	3
■	2
■	1

20 cm

Fig. 1. Camera locations and image overlap.

Number of images:	118	Camera stations:	118
Flying altitude:	54 cm	Tie points:	745,343
Ground resolution:	0.0396 mm/pix	Projections:	2,425,028
Coverage area:	87.6 cm²	Reprojection error:	0.579 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
DMC-G7 (50mm)	4592 x 2584	50 mm	3.8 x 3.8 µm	No
DMC-G7 (50mm)	4592 x 2584	50 mm	3.8 x 3.8 µm	No

Table 1. Cameras.

Camera Calibration
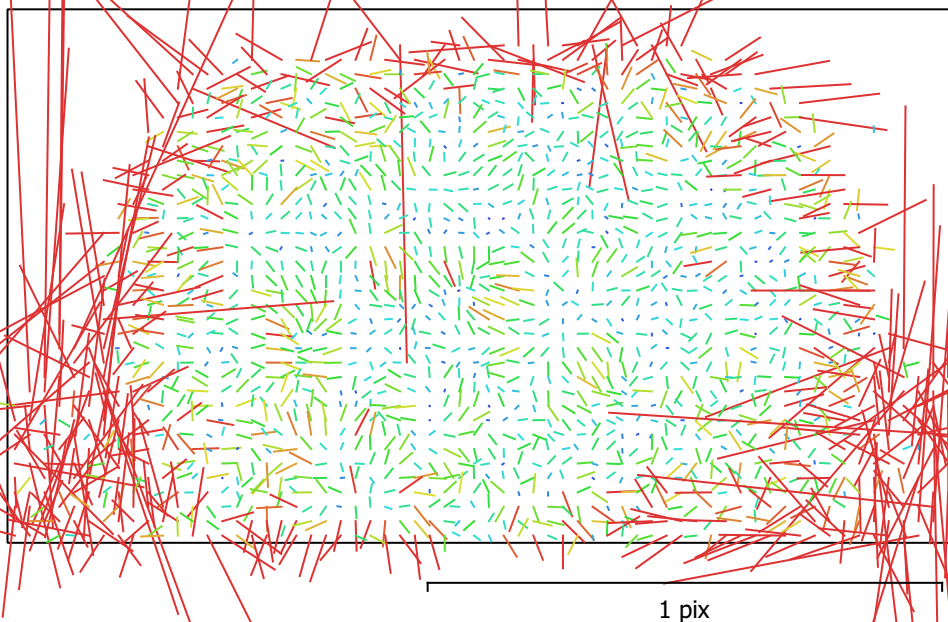
Fig. 2. Image residuals for DMC-G7 (50mm).

DMC-G7 (50mm)

61 images

Type	Resolution	Focal Length	Pixel Size
Frame	**4592 x 2584**	**50 mm**	**3.8 x 3.8 µm**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**13643.8**	1.9	1.00	-0.09	-0.17	-0.37	0.05	-0.03	-0.05	-0.03
Cx	**29.9947**	1.7		1.00	-0.07	-0.00	-0.00	-0.01	0.91	-0.10
Cy	**-24.2916**	3.6			1.00	0.10	-0.15	0.08	-0.06	0.94
K1	**0.115233**	0.0011				1.00	-0.84	0.71	0.01	-0.04
K2	**-2.89149**	0.098					1.00	-0.94	-0.03	-0.09
K3	**46.7362**	2.7						1.00	0.02	0.04
P1	**0.00111773**	5.5e-05							1.00	-0.08
P2	**-0.00385377**	8.9e-05								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration
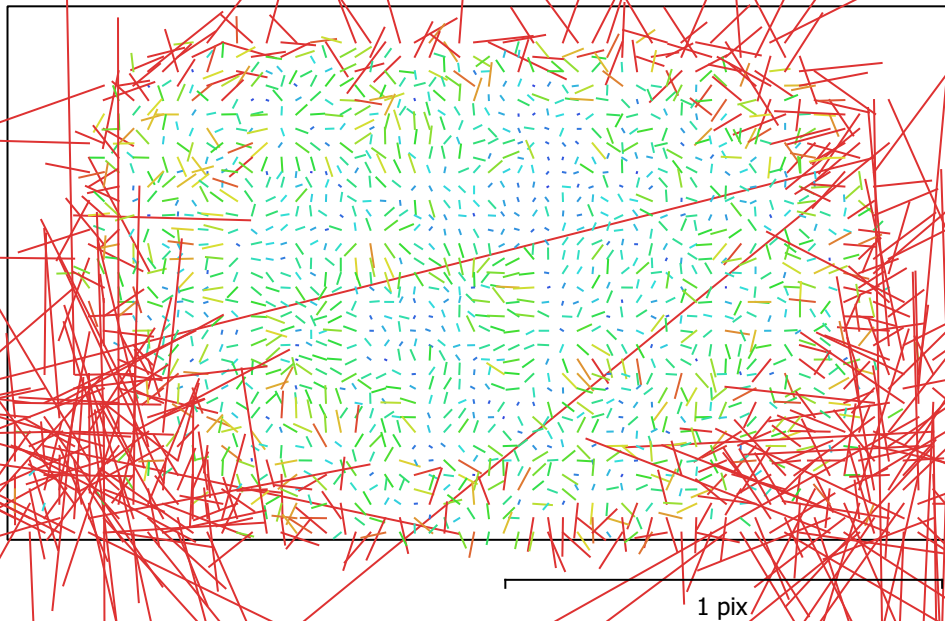
Fig. 3. Image residuals for DMC-G7 (50mm).

DMC-G7 (50mm)

57 images

Type	Resolution	Focal Length	Pixel Size
Frame	**4592 x 2584**	**50 mm**	**3.8 x 3.8 µm**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	13650	1.9	1.00	-0.08	-0.25	-0.20	-0.07	0.06	-0.07	-0.23
Cx	39.0361	1.9		1.00	-0.10	-0.03	0.05	-0.05	0.90	-0.14
Cy	-48.9939	3.8			1.00	0.01	-0.02	0.01	-0.11	0.94
K1	0.122863	0.0012				1.00	-0.86	0.74	-0.01	-0.04
K2	-4.09182	0.12					1.00	-0.95	0.03	0.01
K3	85.3523	3.9						1.00	-0.03	-0.01
P1	0.00148039	6e-05							1.00	-0.13
P2	-0.00450694	9.2e-05								1.00

Table 3. Calibration coefficients and correlation matrix.

Scale Bars

Label	Distance (m)	Error (m)
target 15_target 16	0.05	2.08167e-16
Total		**2.08167e-16**

Table 4. Control scale bars.

Digital Elevation Model

-56.1 cm

-64.4 cm

20 cm
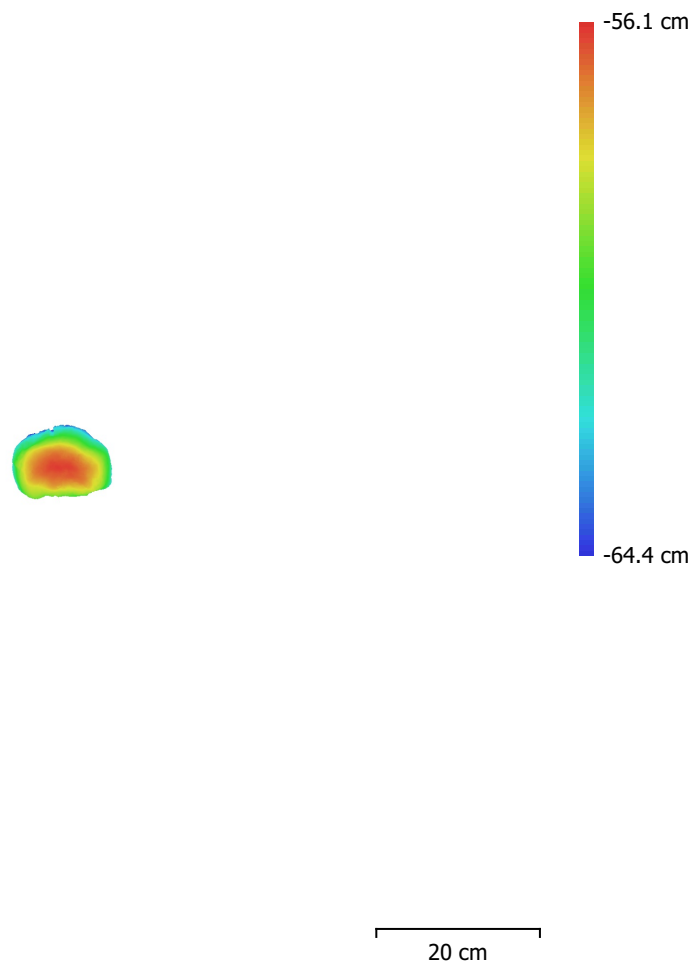
Fig. 4. Reconstructed digital elevation model.

Resolution:	0.133 mm/pix
Point density:	57 points/mm²

Processing Parameters

General

Cameras	118
Aligned cameras	118
Markers	7
Scale bars	2
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	745,343 of 885,446
RMS reprojection error	0.150501 (0.579041 pix)
Max reprojection error	0.470606 (42.7303 pix)
Mean key point size	3.0399 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.52832
File size	67.28 MB

Depth Maps

Count	118

  Depth maps generation parameters

Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	8 minutes 33 seconds
Memory usage	6.20 GB
Date created	2024:05:24 12:42:09
Software version	1.8.4.14671
File size	676.06 MB

Model

Faces	2,114,693
Vertices	1,057,352
Vertex colors	3 bands, uint8
Texture	16,000 x 16,000 x 4, 4 bands, uint8

  Depth maps generation parameters

Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	8 minutes 33 seconds
Memory usage	6.20 GB

  Reconstruction parameters

Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	4 minutes 11 seconds
Memory usage	8.90 GB

  Texturing parameters

Mapping mode	Generic
Blending mode	Mosaic
Texture size	16,000
Enable hole filling	No

Enable ghosting filter	Yes
UV mapping time	1 minutes 5 seconds
UV mapping memory usage	2.65 GB
Blending time	21 minutes 25 seconds
Blending memory usage	62.77 GB
Date created	2024:05:24 12:46:16
Software version	1.8.4.14671
File size	675.60 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