Agisoft Metashape

Processing Report
24 June 2024

Survey Data

> 9
9
8
7
6
5
4
3
2
1

20 cm
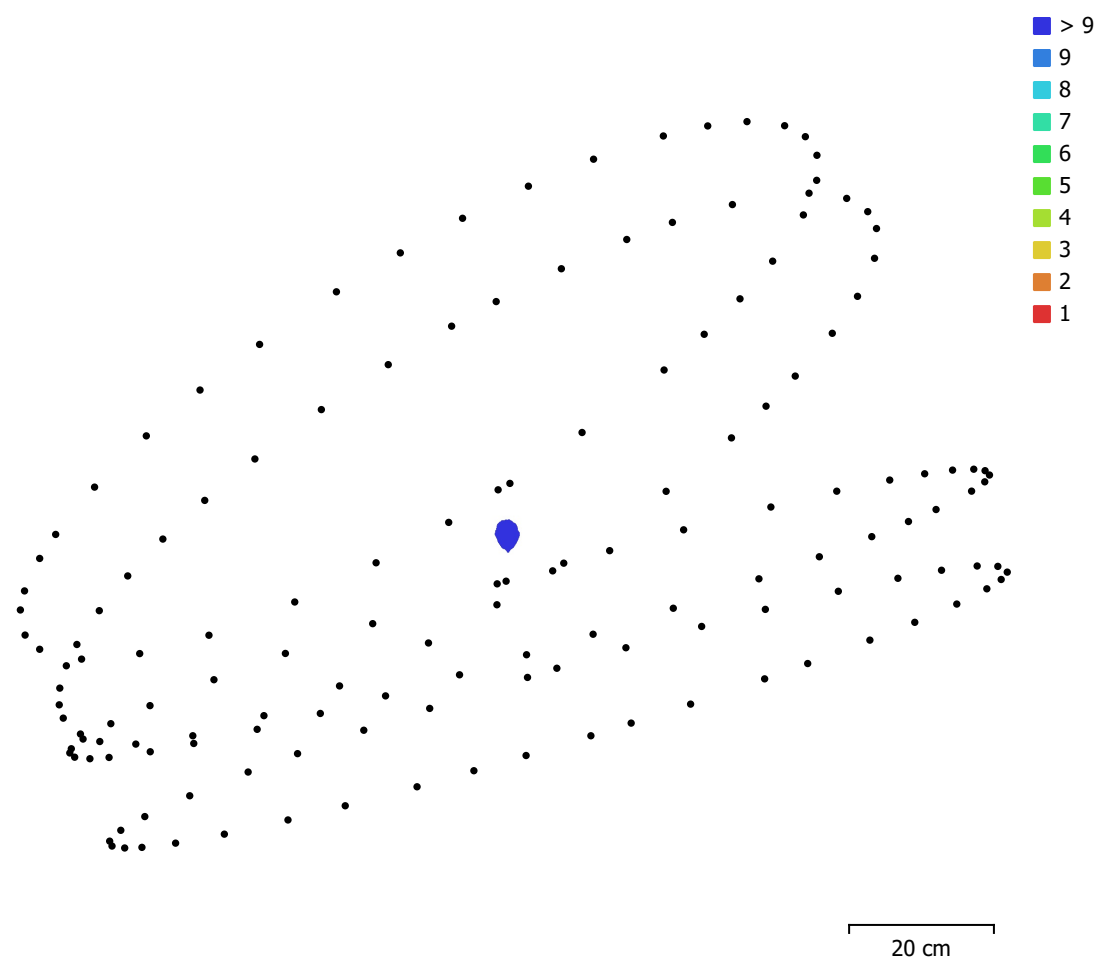
Fig. 1. Camera locations and image overlap.

Number of images:	153	Camera stations:	153
Flying altitude:	63.3 cm	Tie points:	194,239
Ground resolution:	0.0434 mm/pix	Projections:	597,457
Coverage area:	10.9 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
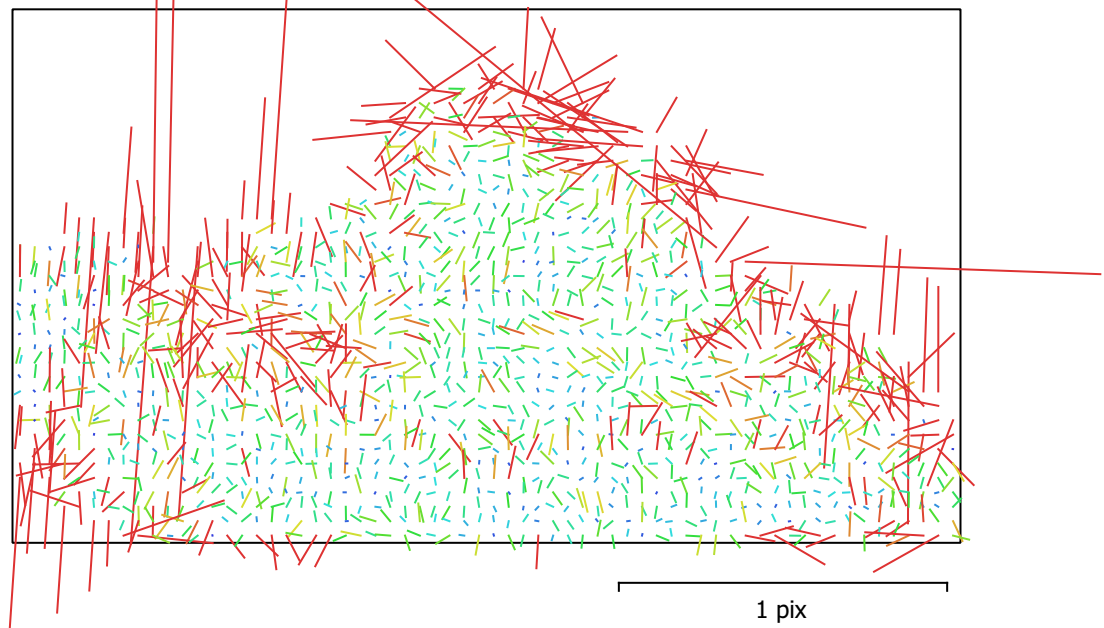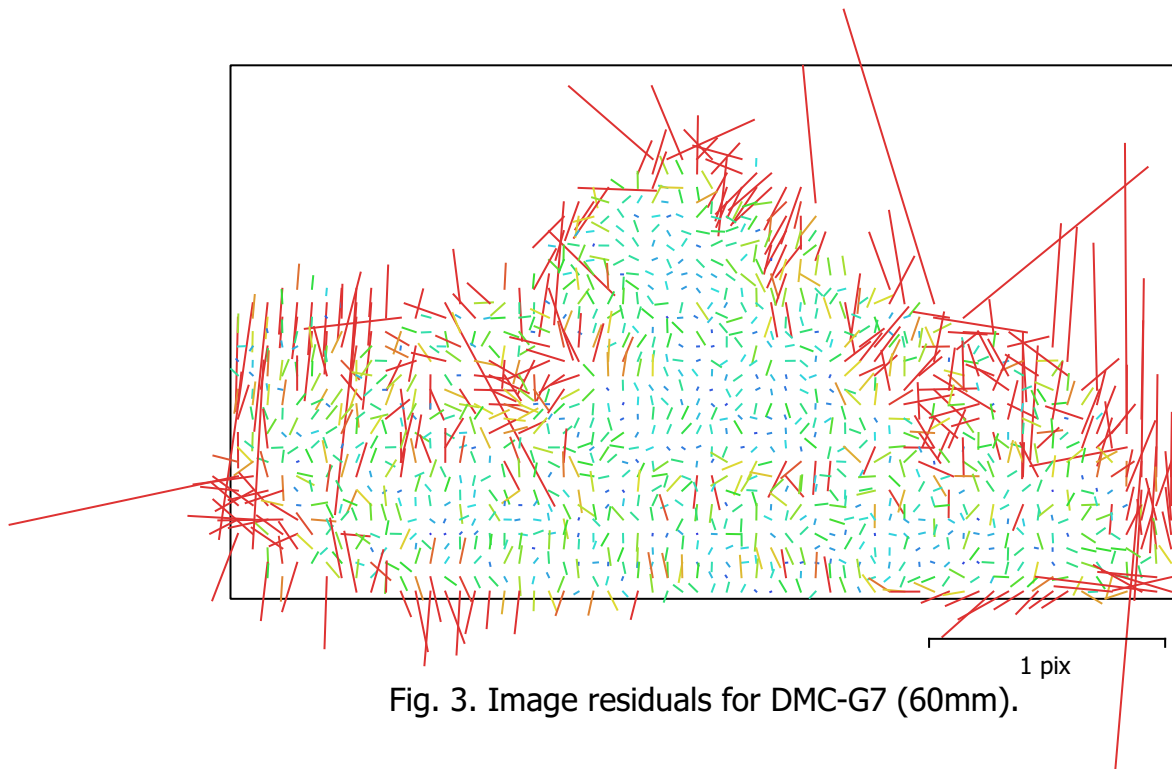

Fig. 2. Image residuals for DMC-G7 (60mm).

DMC-G7 (60mm)

78 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	**15628.7**	3.9	1.00	0.21	-0.48	-0.16	0.12	-0.08	0.22	-0.38
Cx	**29.6214**	8.5		1.00	-0.11	0.05	-0.07	0.14	0.99	-0.05
Cy	**22.8257**	6.6			1.00	0.17	-0.24	0.23	-0.08	0.72
K1	**0.14709**	0.0042				1.00	-0.92	0.83	0.04	-0.04
K2	**-6.87621**	0.36					1.00	-0.98	-0.07	-0.15
K3	**166.979**	9.6						1.00	0.14	0.19
P1	**0.00205683**	0.00022							1.00	-0.05
P2	**-0.00538236**	0.00013								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

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

DMC-G7 (60mm)

75 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	**15405.6**	4.3	1.00	-0.16	-0.36	0.13	-0.21	0.19	-0.12	-0.33
Cx	**-616.737**	10		1.00	-0.04	-0.13	0.33	-0.45	0.98	-0.10
Cy	**291.972**	7.5			1.00	-0.36	0.29	-0.23	-0.04	0.77
K1	**0.0509097**	0.0035				1.00	-0.87	0.75	-0.18	-0.33
K2	**4.30202**	0.21					1.00	-0.97	0.31	0.16
K3	**-71.3764**	3.9						1.00	-0.42	-0.11
P1	**-0.016428**	0.00031							1.00	-0.09
P2	**-0.00954039**	0.00014								1.00

Table 3. Calibration coefficients and correlation matrix.

Scale Bars

Label	Distance (m)	Error (m)
target 19_target 20	0.05	1.38778e-17
Total		**1.38778e-17**

Table 4. Control scale bars.

Digital Elevation Model

-1.18 m

-1.19 m

20 cm
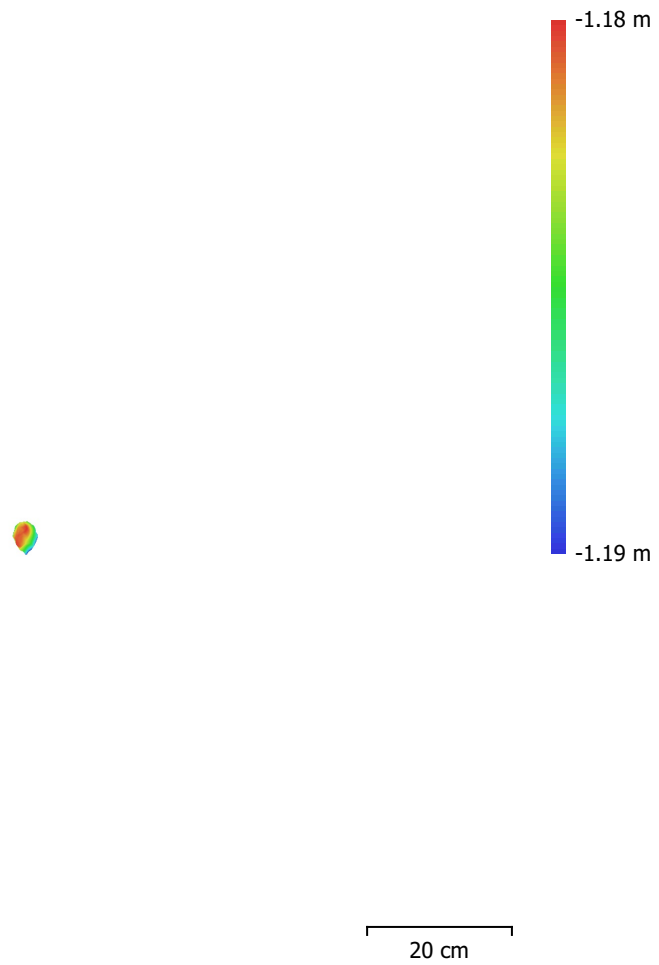
Fig. 4. Reconstructed digital elevation model.

Resolution: 0.112 mm/pix
Point density: 79.3 points/mm²

Processing Parameters

General

Cameras	153
Aligned cameras	153
Markers	4
Scale bars	1
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	194,239 of 225,297
RMS reprojection error	0.200108 (0.707991 pix)
Max reprojection error	0.652101 (49.0984 pix)
Mean key point size	3.0114 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.51927
File size	17.21 MB

Depth Maps

Count	153

Depth maps generation parameters

Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	2 minutes 59 seconds
Memory usage	2.62 GB
Date created	2024:05:24 15:56:35
Software version	1.8.4.14671
File size	22.00 MB

Dense Point Cloud

Points	376,109
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Mild
Max neighbors	16
Processing time	2 minutes 59 seconds
Memory usage	2.62 GB

Dense cloud generation parameters

Processing time	1 minutes 55 seconds
Memory usage	4.65 GB
Date created	2024:05:24 15:58:31
Software version	1.8.4.14671
File size	4.95 MB

Model

Faces	305,068
Vertices	152,536
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	14 seconds
UV mapping memory usage	733.71 MB
Blending time	1 minutes 20 seconds
Blending memory usage	13.94 GB
Blending GPU memory usage	11.90 GB
File size	132.56 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