Agisoft Metashape

Processing Report
24 June 2024

Survey Data

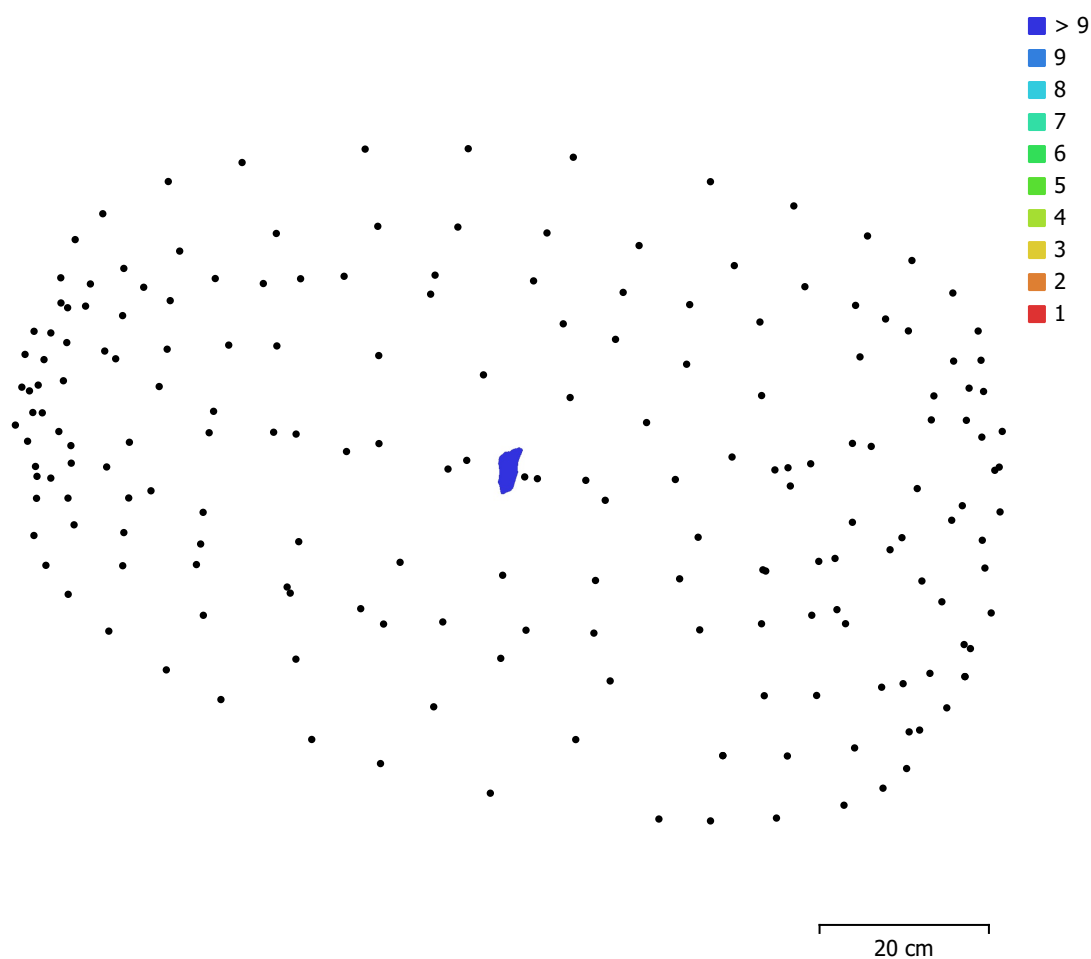
	> 9
	9
	8
	7
	6
	5
	4
	3
	2
	1

20 cm

Fig. 1. Camera locations and image overlap.

Number of images:	191	Camera stations:	191
Flying altitude:	56 cm	Tie points:	215,777
Ground resolution:	0.0358 mm/pix	Projections:	747,533
Coverage area:	10.6 cm²	Reprojection error:	0.716 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
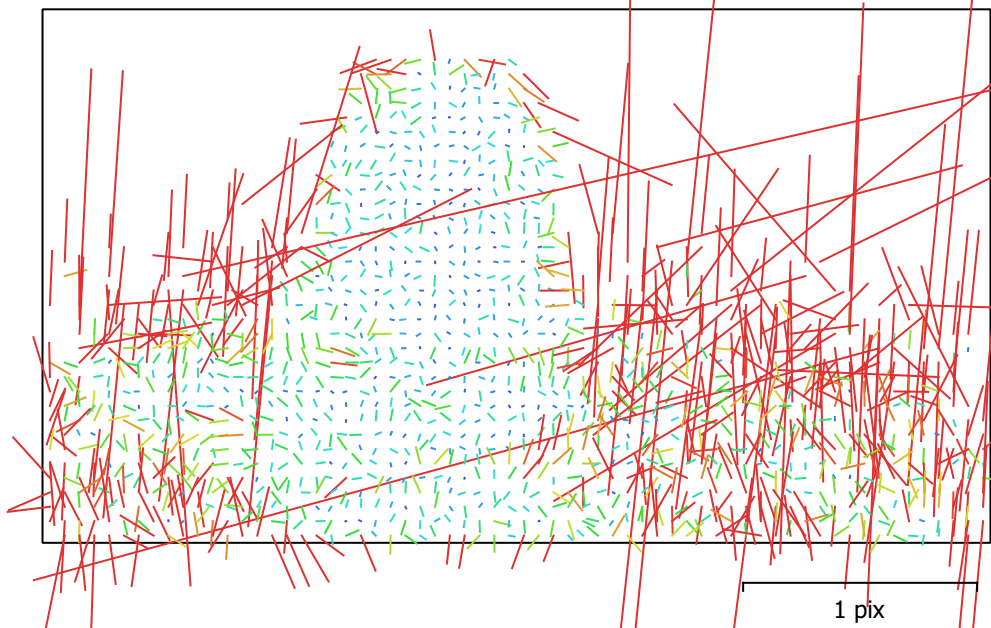
Fig. 2. Image residuals for DMC-G7 (60mm).

DMC-G7 (60mm)

90 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	**15552.6**	6.7	1.00	0.32	-0.18	-0.42	0.25	-0.21	0.15	0.33
Cx	**98.7403**	9.4		1.00	-0.18	-0.37	0.56	-0.57	0.92	-0.03
Cy	**-451.75**	12			1.00	-0.06	-0.41	0.48	-0.21	0.73
K1	**0.420541**	0.0084				1.00	-0.75	0.63	-0.12	-0.47
K2	**-16.0819**	0.52					1.00	-0.98	0.46	-0.13
K3	**257.792**	12						1.00	-0.50	0.23
P1	**0.00649423**	0.00026							1.00	-0.21
P2	**-0.0101913**	0.00035								1.00

Table 2. Calibration coefficients and correlation matrix.

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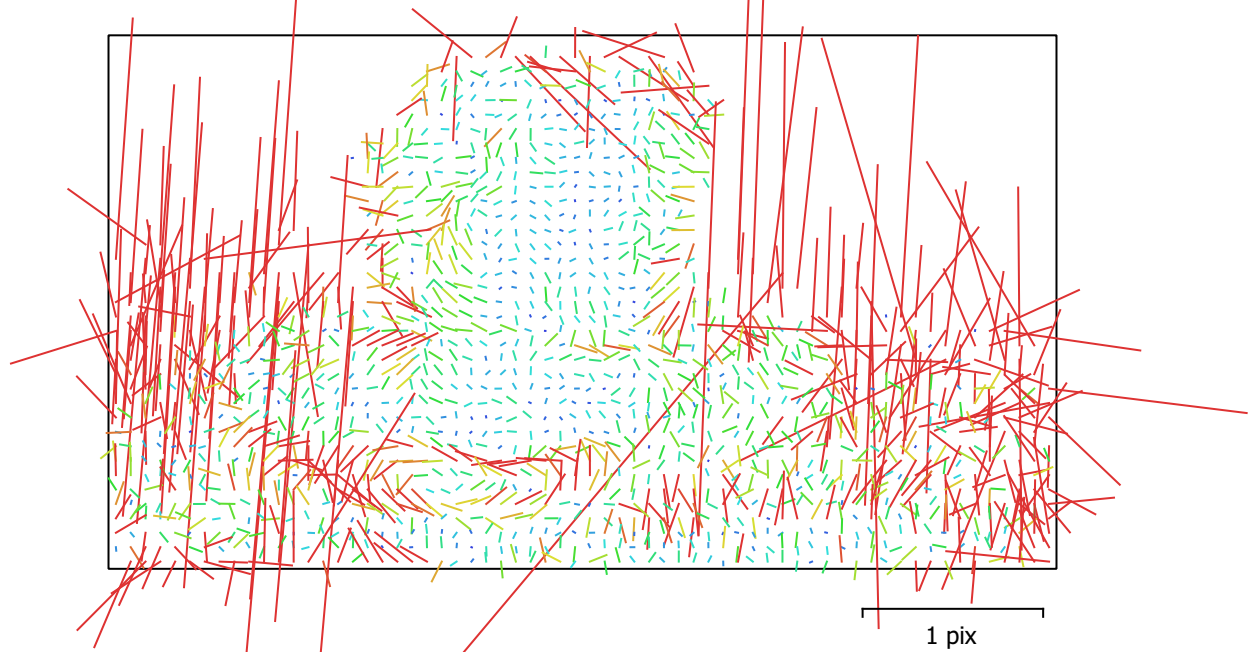
Fig. 3. Image residuals for DMC-G7 (60mm).

DMC-G7 (60mm)

101 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	**15705.6**	7	1.00	-0.18	-0.44	-0.21	0.11	-0.07	-0.15	-0.28
Cx	**-0.63446**	8.6		1.00	0.13	0.04	-0.17	0.22	0.92	0.17
Cy	**141.936**	12			1.00	-0.07	0.21	-0.33	0.09	0.88
K1	**-0.0666897**	0.0051				1.00	-0.90	0.77	0.12	-0.03
K2	**13.0391**	0.53					1.00	-0.96	-0.19	0.15
K3	**-384.965**	17						1.00	0.23	-0.28
P1	**0.000779422**	0.0002							1.00	0.13
P2	**-0.00612687**	0.00021								1.00

Table 3. Calibration coefficients and correlation matrix.

Scale Bars

Label	Distance (m)	Error (m)
target 15_target 16	0.0501422	0.00014218
target 19_target 20	0.049857	-0.000142961
Total		**0.000142571**

Table 4. Control scale bars.

Digital Elevation Model

-3.29 m

-3.33 m

20 cm
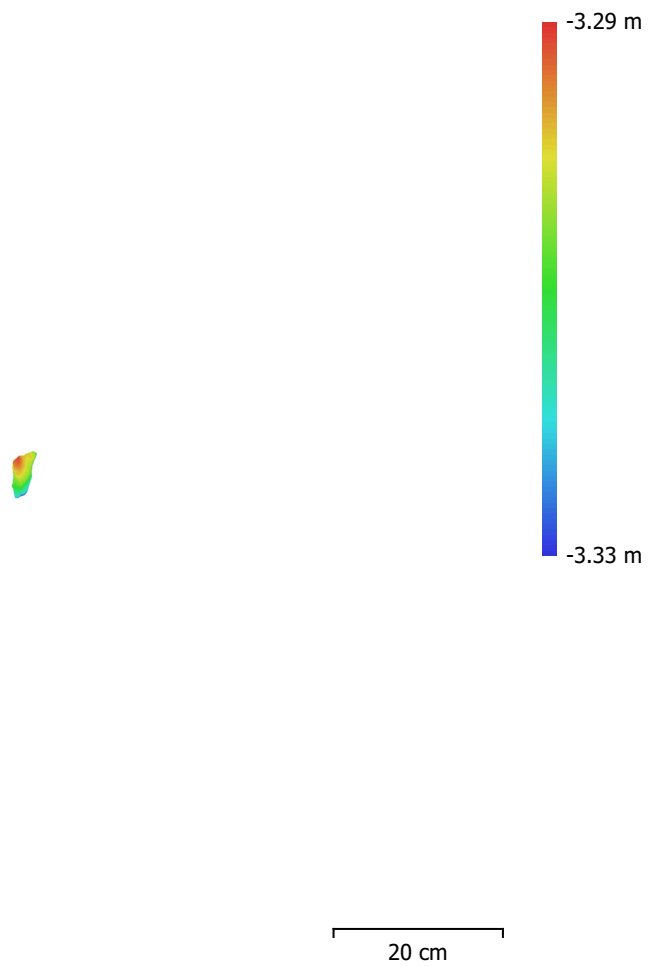
Fig. 4. Reconstructed digital elevation model.

Resolution: 0.125 mm/pix
Point density: 63.7 points/mm²

Processing Parameters

General

Cameras	191
Aligned cameras	191
Markers	7
Scale bars	2
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	215,777 of 260,019
RMS reprojection error	0.230785 (0.715812 pix)
Max reprojection error	0.748331 (27.4684 pix)
Mean key point size	2.89216 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	4.04749
File size	21.77 MB

Depth Maps

Count	191

   Depth maps generation parameters

Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	12 minutes 18 seconds
Memory usage	6.13 GB
Date created	2024:06:12 11:52:02
Software version	1.8.4.14671
File size	175.59 MB

Model

Faces	197,696
Vertices	98,850
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	12 minutes 18 seconds
Memory usage	6.13 GB

   Reconstruction parameters

Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	1 minutes 47 seconds
Memory usage	8.51 GB

   Texturing parameters

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

Enable ghosting filter	Yes
UV mapping time	43 seconds
UV mapping memory usage	606.30 MB
Blending time	1 minutes 27 seconds
Blending memory usage	13.49 GB
Blending GPU memory usage	11.90 GB
Date created	2024:06:12 11:58:06
Software version	1.8.4.14671
File size	171.04 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