

Agisoft Metashape

Processing Report

27 June 2024



Survey Data

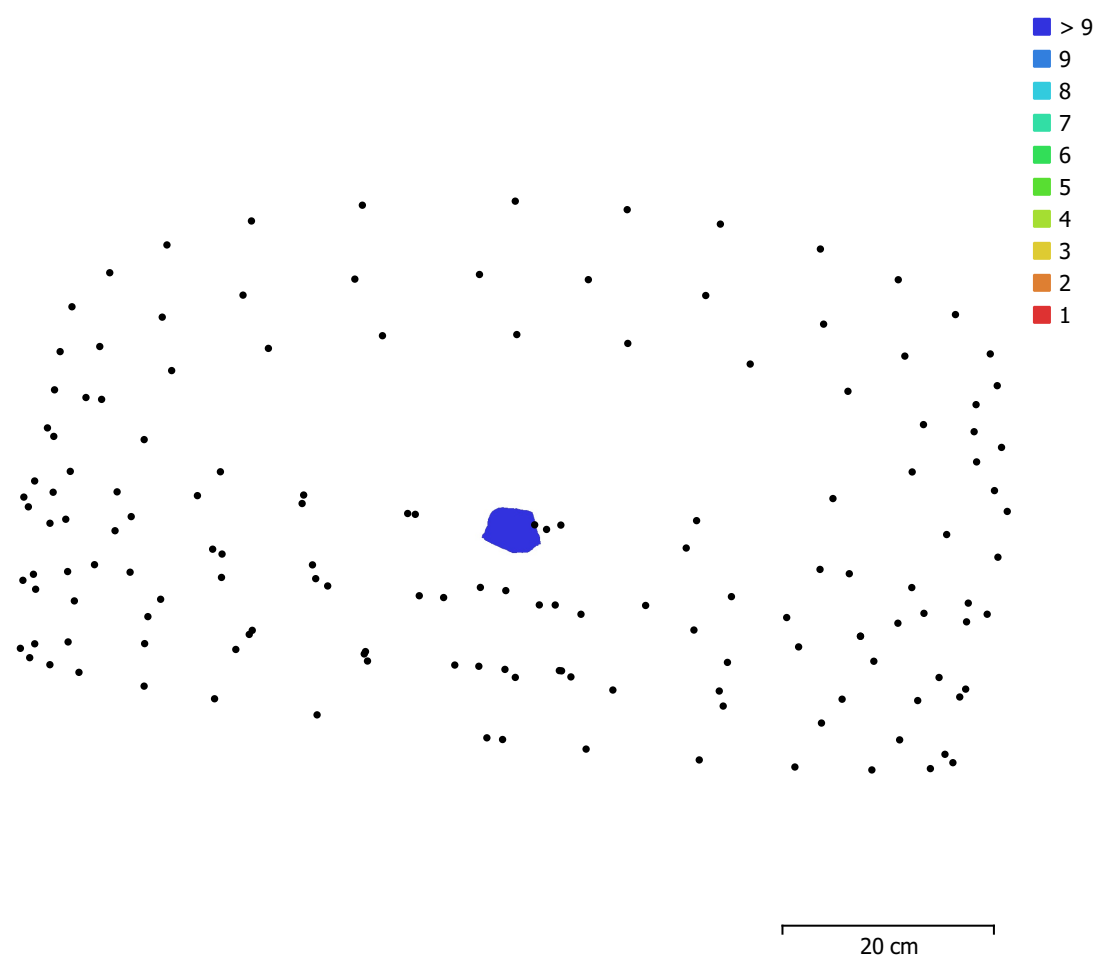


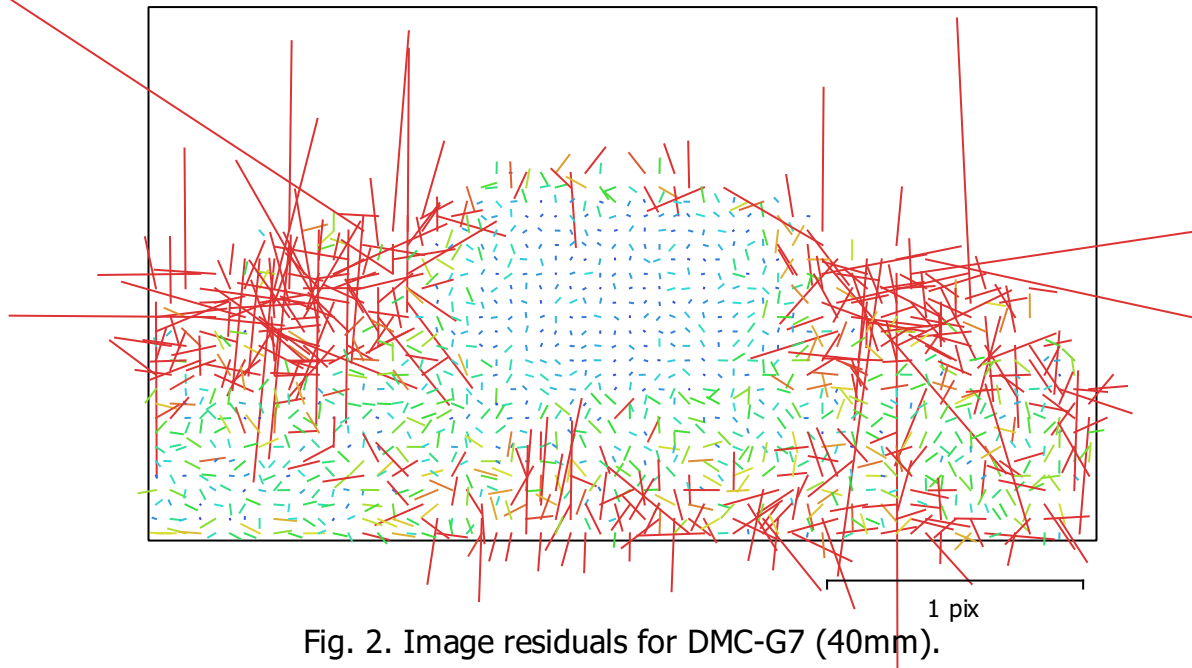
Fig. 1. Camera locations and image overlap.

Number of images:	149	Camera stations:	149
Flying altitude:	44.6 cm	Tie points:	132,242
Ground resolution:	0.0402 mm/pix	Projections:	501,588
Coverage area:	17.9 cm ²	Reprojection error:	0.65 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
DMC-G7 (40mm)	4592 x 2584	40 mm	3.78 x 3.78 μm	No
DMC-G7 (40mm)	4592 x 2584	40 mm	3.78 x 3.78 μm	No

Table 1. Cameras.

Camera Calibration



DMC-G7 (40mm)

75 images

Type	Resolution	Focal Length	Pixel Size
Frame	4592 x 2584	40 mm	3.78 x 3.78 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	11084.4	1.8	1.00	0.33	-0.56	-0.34	0.27	-0.23	0.27	-0.06
Cx	198.037	6.1		1.00	-0.18	-0.01	0.12	-0.12	0.99	-0.04
Cy	-3.14862	5			1.00	-0.03	0.04	-0.01	-0.13	0.63
K1	0.0535361	0.0029				1.00	-0.90	0.81	0.02	-0.28
K2	-0.493186	0.094					1.00	-0.98	0.12	0.17
K3	4.09374	1						1.00	-0.12	-0.13
P1	0.00810164	0.00021							1.00	-0.05
P2	-0.00310509	0.00012								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

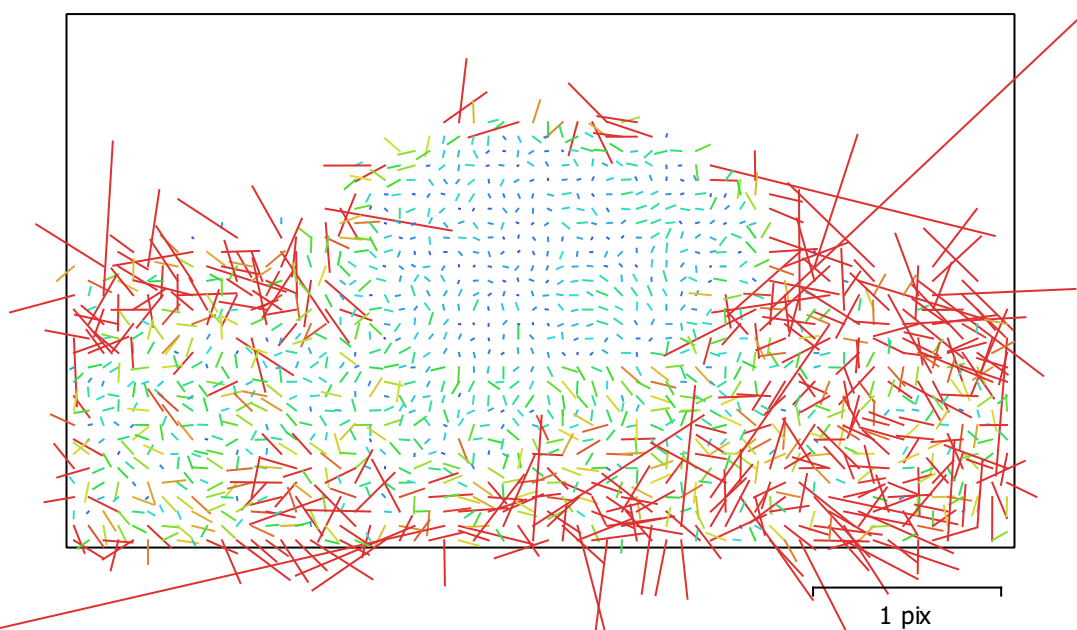


Fig. 3. Image residuals for DMC-G7 (40mm).

DMC-G7 (40mm)

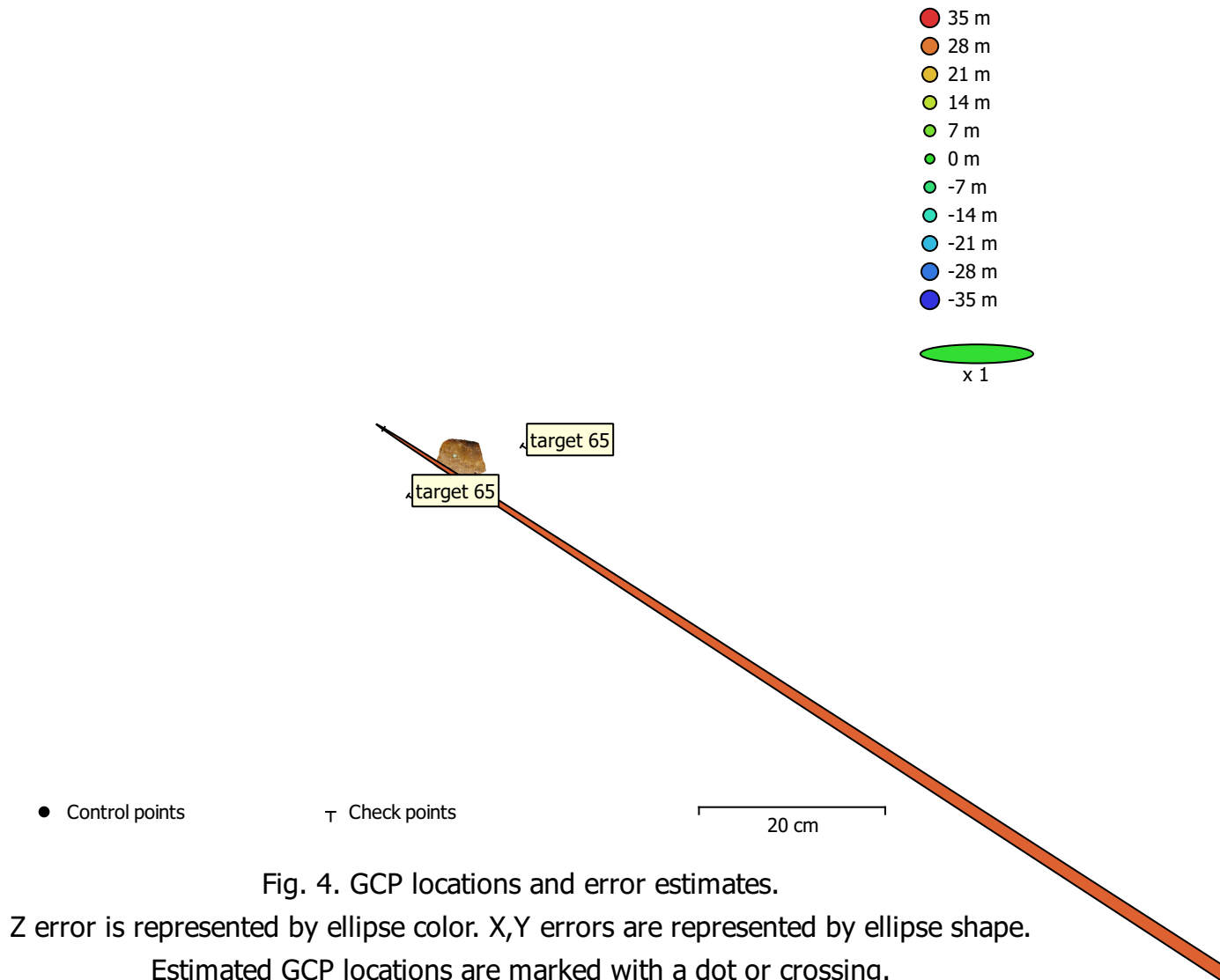
74 images

Type	Resolution	Focal Length	Pixel Size
Frame	4592 x 2584	40 mm	3.78 x 3.78 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	11101.1	1.7	1.00	0.33	-0.66	-0.25	0.29	-0.26	0.30	-0.37
Cx	192.243	5		1.00	-0.21	-0.11	0.28	-0.28	0.99	-0.21
Cy	-99.6612	5.3			1.00	-0.04	-0.07	0.10	-0.18	0.85
K1	0.122707	0.0024				1.00	-0.88	0.78	-0.09	-0.17
K2	-1.81316	0.084					1.00	-0.97	0.29	0.01
K3	13.5635	0.92						1.00	-0.29	0.04
P1	0.00805035	0.00018							1.00	-0.20
P2	-0.00245381	0.00014								1.00

Table 3. Calibration coefficients and correlation matrix.

Ground Control Points



Count	X error (m)	Y error (m)	Z error (m)	XY error (m)	Total (m)
1	4.68923	3.04381	30.1894	5.5905	30.7026

Table 4. Check points RMSE.

Label	X error (m)	Y error (m)	Z error (m)	Total (m)	Image (pix)
point 1	-4.68923	3.04381	30.1894	30.7026	0.000 (64)
target 65					0.351 (2)
target 65					0.835 (6)
Total	4.68923	3.04381	30.1894	30.7026	0.000

Table 5. Check points.

Scale Bars

Label	Distance (m)	Error (m)
target 65_point 1	0.15	2.24543e-14
Total		2.24543e-14

Table 6. Control scale bars.

Digital Elevation Model

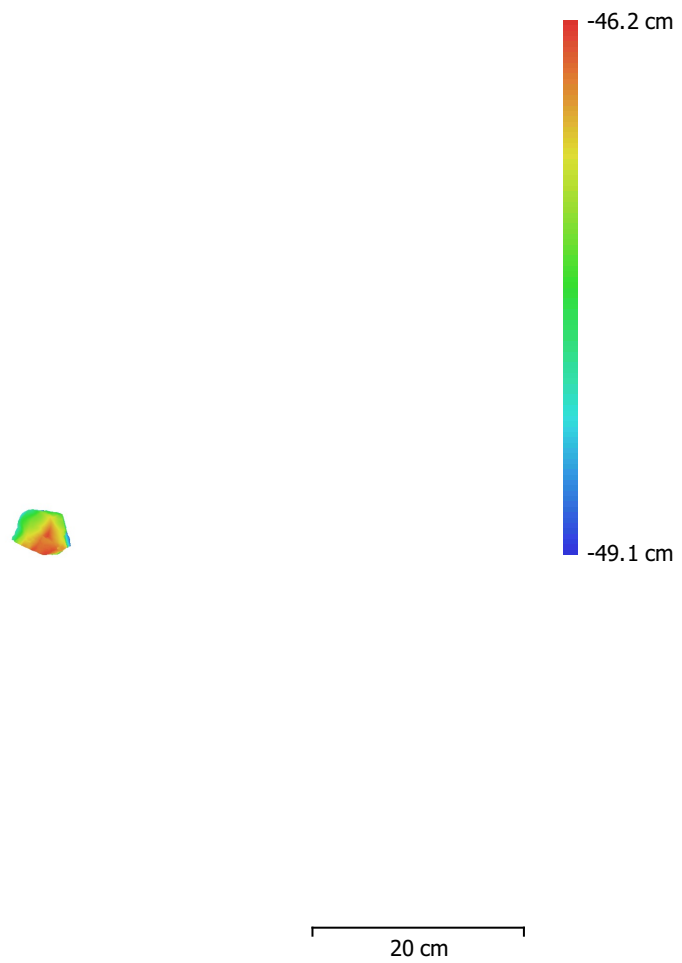


Fig. 5. Reconstructed digital elevation model.

Resolution: 0.424 mm/pix
Point density: 5.57 points/mm²

Processing Parameters

General

Cameras	149
Aligned cameras	149
Markers	3
Scale bars	1

Tie Points

Points	132,242 of 165,282
RMS reprojection error	0.171283 (0.64966 pix)
Max reprojection error	0.542899 (24.0751 pix)
Mean key point size	3.1385 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	4.17124
File size	14.04 MB

Model

Faces	50,000
Vertices	25,002
Vertex colors	3 bands, uint8
Texture	8,192 x 8,192, 4 bands, uint8

Depth maps generation parameters

Quality	Ultra High
Filtering mode	Mild
Max neighbors	16
Processing time	9 minutes 45 seconds
Memory usage	8.26 GB

Reconstruction parameters

Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	2 minutes 11 seconds
Memory usage	8.12 GB

Texturing parameters

Mapping mode	Generic
Blending mode	Mosaic
Texture size	8,192
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	9 seconds
UV mapping memory usage	36.80 MB
Blending time	40 seconds
Blending memory usage	2.43 GB
Blending GPU memory usage	1.87 GB
Date created	2024:06:15 11:51:47
Software version	1.8.4.14671
File size	40.69 MB

System

Software name	Agisoft Metashape Standard
Software version	2.1.1 build 17821
OS	Windows 64 bit

RAM
CPU
GPU(s)

15.70 GB
Intel(R) Core(TM) i9-9980HK CPU @ 2.40GHz
Quadro T2000