

Agisoft Metashape

Processing Report
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Survey Data

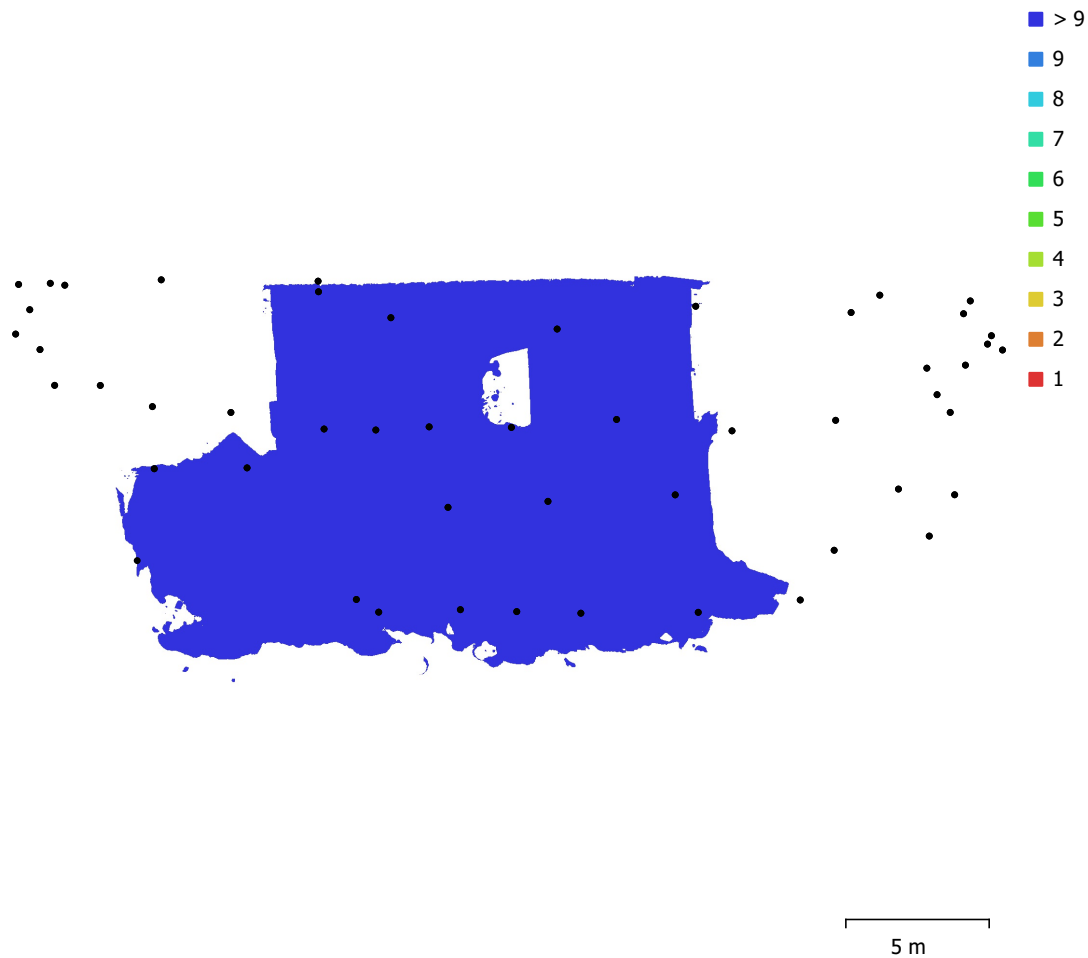


Fig. 1. Camera locations and image overlap.

Number of images:	112	Camera stations:	101
Flying altitude:	11.3 m	Tie points:	37,351
Ground resolution:	2.5 mm/pix	Projections:	245,241
Coverage area:	224 m ²	Reprojection error:	0.386 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Canon EOS 70D (18mm)	5472 x 3648	18 mm	4.17 x 4.17 μ m	No
Canon EOS 70D (22mm)	5472 x 3648	22 mm	4.17 x 4.17 μ m	No
Canon EOS 70D (24mm)	5472 x 3648	24 mm	4.17 x 4.17 μ m	No
Canon EOS 70D (20mm)	5472 x 3648	20 mm	4.17 x 4.17 μ m	No
Canon EOS 70D (19mm)	5472 x 3648	19 mm	4.17 x 4.17 μ m	No

Table 1. Cameras.

Camera Calibration

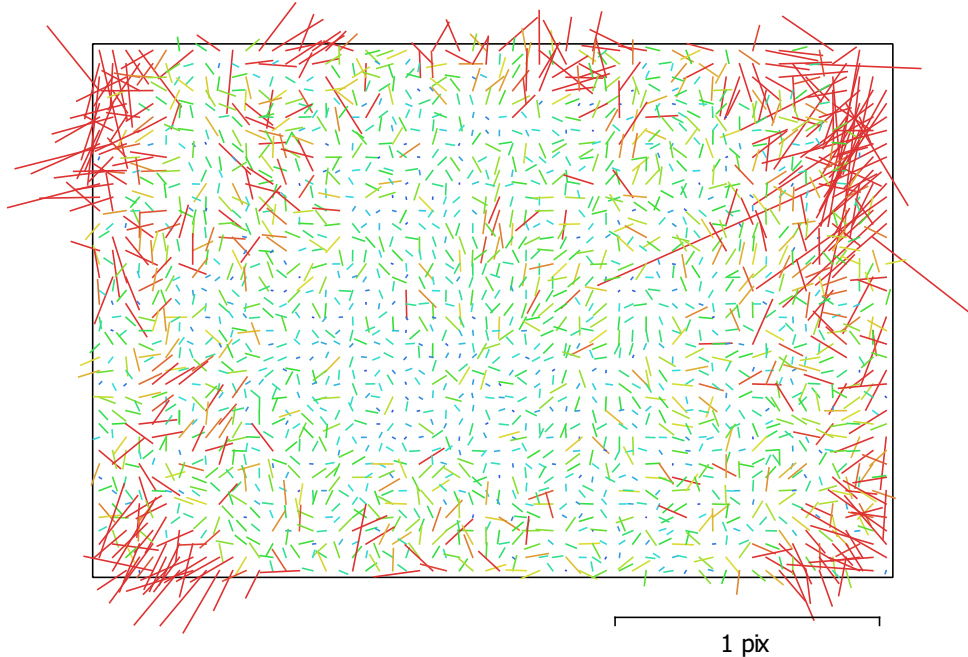


Fig. 2. Image residuals for Canon EOS 70D (18mm).

Canon EOS 70D (18mm)

98 images

Type	Resolution	Focal Length	Pixel Size
Frame	5472 x 3648	18 mm	4.17 x 4.17 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	4490.77	0.056	1.00	-0.05	-0.25	-0.24	0.18	-0.12	-0.02	-0.09
Cx	22.7221	0.073		1.00	-0.05	-0.06	0.09	-0.10	0.59	-0.03
Cy	-53.644	0.084			1.00	-0.04	0.02	0.02	-0.03	0.47
K1	-0.188842	4e-005				1.00	-0.95	0.89	-0.00	-0.06
K2	0.174793	0.00017					1.00	-0.98	0.03	0.03
K3	-0.0189201	0.00021						1.00	-0.04	-0.01
P1	0.00103209	3.8e-006							1.00	0.02
P2	-0.00128617	2.8e-006								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

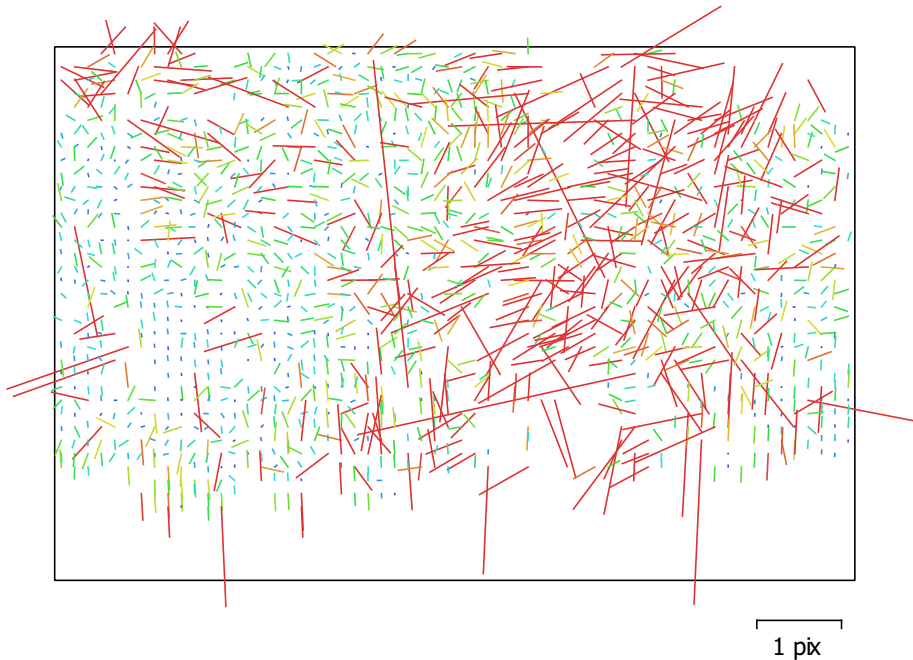


Fig. 3. Image residuals for Canon EOS 70D (22mm).

Canon EOS 70D (22mm)

8 images

Type
Frame

Resolution
5472 x 3648

Focal Length
22 mm

Pixel Size
4.17 x 4.17 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	5132.27	0.39	1.00	0.10	0.03	-0.20	0.20	-0.17	-0.53	-0.05
Cx	9.98989	0.35		1.00	0.20	-0.05	0.07	-0.12	0.57	0.09
Cy	-31.4633	0.34			1.00	-0.04	0.04	-0.07	0.15	0.16
K1	-0.149811	0.00031				1.00	-0.97	0.91	-0.05	0.19
K2	0.188356	0.0018					1.00	-0.98	0.07	-0.15
K3	0.0665895	0.0031						1.00	-0.12	0.12
P1	0.0012369	2.1e-005							1.00	0.08
P2	-0.00147649	1.3e-005								1.00

Table 3. Calibration coefficients and correlation matrix.

Camera Calibration

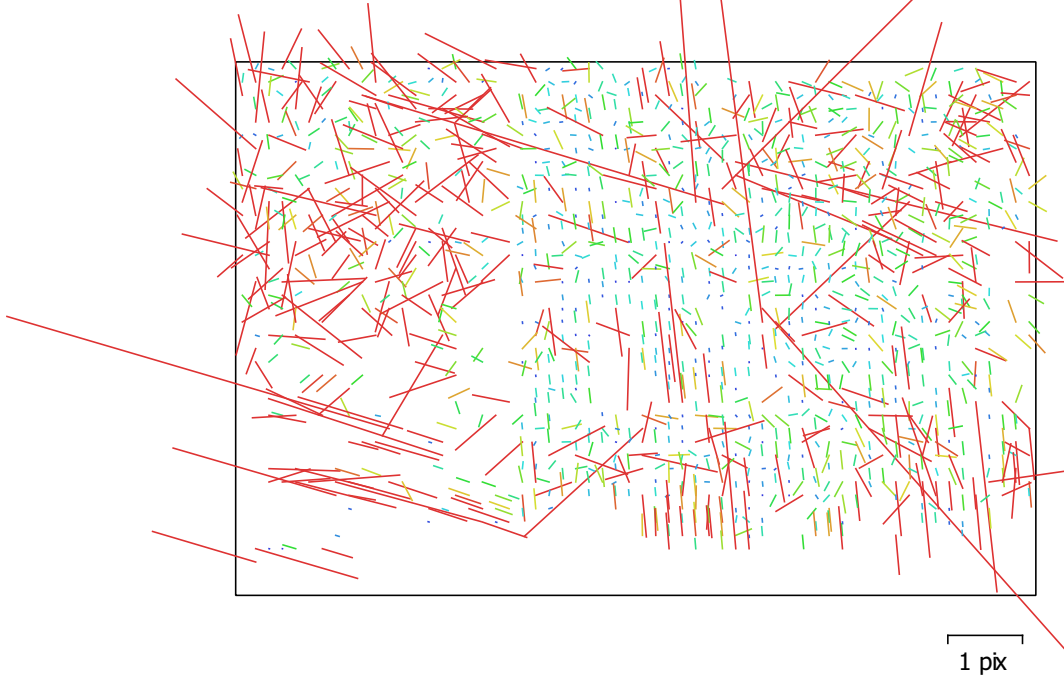


Fig. 4. Image residuals for Canon EOS 70D (24mm).

Canon EOS 70D (24mm)

2 images

Type
Frame

Resolution
5472 x 3648

Focal Length
24 mm

Pixel Size
4.17 x 4.17 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	5422.24	7.7	1.00	-0.24	-0.62	-0.58	0.34	0.14	0.19	0.13
Cx	22.2338	0.76		1.00	-0.01	0.02	0.08	-0.20	0.33	0.04
Cy	-36.6238	0.88			1.00	0.36	-0.24	-0.08	-0.18	-0.21
K1	-0.114746	0.00063				1.00	-0.94	0.66	-0.14	-0.05
K2	0.210392	0.0036					1.00	-0.87	0.11	0.06
K3	0.0874615	0.0069						1.00	-0.03	-0.00
P1	0.00174991	3.4e-005							1.00	0.01
P2	-0.0020571	1.9e-005								1.00

Table 4. Calibration coefficients and correlation matrix.

Camera Calibration

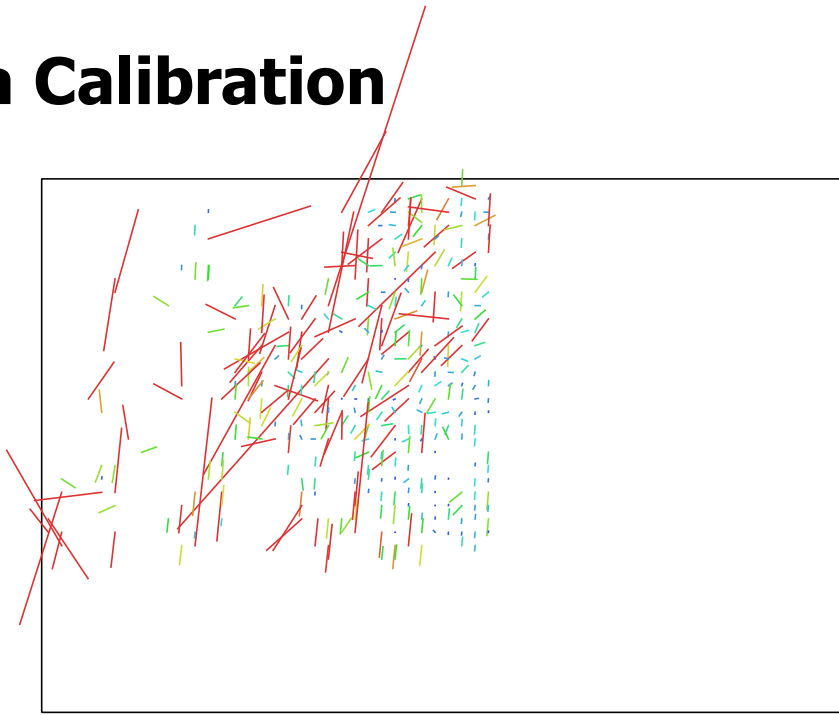


Fig. 5. Image residuals for Canon EOS 70D (20mm).

Canon EOS 70D (20mm)

2 images

Type
Frame

Resolution
5472 x 3648

Focal Length
20 mm

Pixel Size
4.17 x 4.17 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	4897.9	12	1.00	-0.95	-0.14	-0.51	0.52	-0.22	0.56	0.11
Cx	-3.04141	7.5		1.00	-0.01	0.46	-0.47	0.18	-0.35	-0.21
Cy	-25.1938	2.6			1.00	-0.20	0.01	0.04	-0.65	0.37
K1	-0.164999	0.0018				1.00	-0.92	0.77	-0.20	0.12
K2	0.210921	0.013					1.00	-0.92	0.34	-0.02
K3	-0.0120383	0.024						1.00	-0.22	0.04
P1	0.000370601	0.00021							1.00	0.03
P2	-0.00107179	7.2e-005								1.00

Table 5. Calibration coefficients and correlation matrix.

Camera Calibration

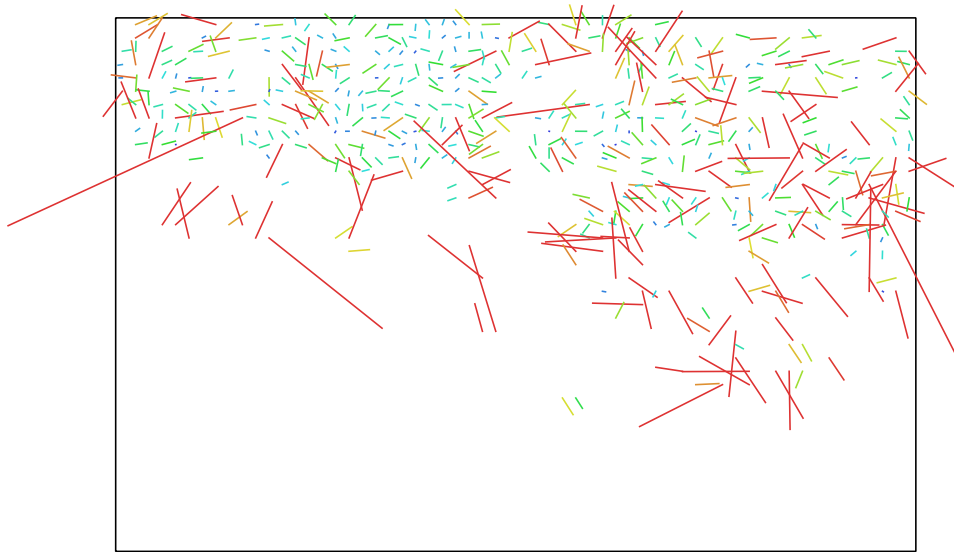


Fig. 6. Image residuals for Canon EOS 70D (19mm).

Canon EOS 70D (19mm)

2 images

Type
Frame

Resolution
5472 x 3648

Focal Length
19 mm

Pixel Size
4.17 x 4.17 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	4470.45	3	1.00	0.22	-0.37	-0.62	0.40	-0.06	-0.34	0.21
Cx	3.03355	0.34		1.00	0.07	-0.18	0.12	-0.05	0.19	-0.25
Cy	-22.9544	0.62			1.00	0.21	-0.14	-0.03	0.43	-0.52
K1	-0.167658	0.00039				1.00	-0.95	0.77	0.09	0.03
K2	0.136419	0.0013					1.00	-0.93	-0.01	-0.04
K3	0.0215368	0.0014						1.00	-0.12	0.12
P1	0.00120212	3.7e-005							1.00	-0.07
P2	-0.00187805	1.6e-005								1.00

Table 6. Calibration coefficients and correlation matrix.

Digital Elevation Model

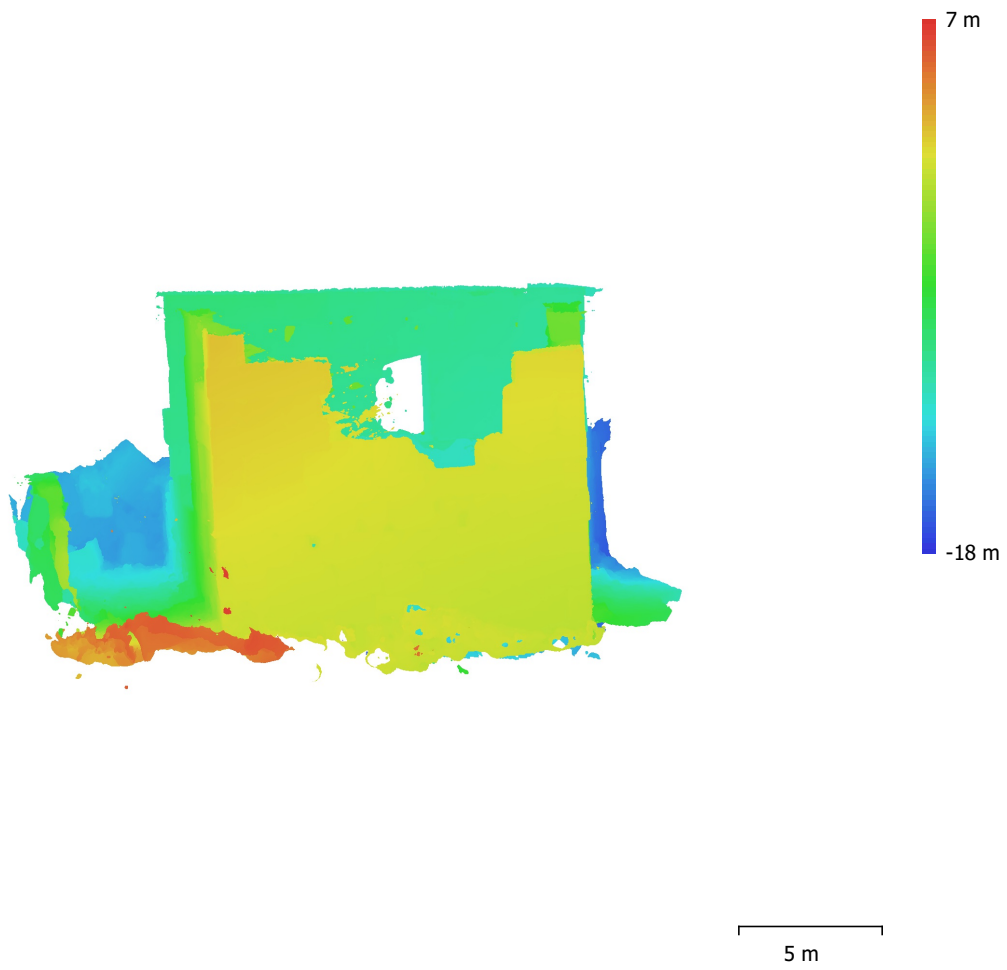


Fig. 7. Reconstructed digital elevation model.

Resolution: unknown
Point density: unknown

Processing Parameters

General

Cameras	112
Aligned cameras	101

Point Cloud

Points	37,351 of 92,297
RMS reprojection error	0.106795 (0.385604 pix)
Max reprojection error	0.323298 (10.7592 pix)
Mean key point size	3.23522 pix
Point colors	3 bands, uint8
Key points	Yes
Average tie point multiplicity	4.24602

Alignment parameters

Accuracy	High
Generic preselection	Yes
Key point limit	40,000
Tie point limit	4,000
Adaptive camera model fitting	No
Matching time	10 minutes 6 seconds
Alignment time	2 minutes 2 seconds

Depth Maps

Count	99
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Reconstruction parameters

Quality	Medium
Filtering mode	Mild
Processing time	40 minutes 53 seconds

Dense Point Cloud

Points	13,792,595
Point colors	3 bands, uint8

Reconstruction parameters

Quality	Medium
Depth filtering	Mild
Depth maps generation time	40 minutes 53 seconds
Dense cloud generation time	14 minutes 52 seconds

Model

Faces	2,102,777
Vertices	1,061,431
Vertex colors	3 bands, uint8

Reconstruction parameters

Surface type	Arbitrary
Source data	Dense
Interpolation	Enabled
Quality	Medium
Depth filtering	Mild
Face count	2,758,497
Processing time	25 minutes 33 seconds

Software

Version	1.5.1 build 7618
Platform	Windows 64