

Agisoft Metashape

Processing Report
26 August 2023



Survey Data



Fig. 1. Camera locations and image overlap.

Number of images:	1,056	Camera stations:	1,056
Flying altitude:	90.8 cm	Tie points:	920,708
Ground resolution:	0.489 mm/pix	Projections:	2,431,275
Coverage area:	35.3 m ²	Reprojection error:	1.14 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Camera 0	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 1	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 2	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 3	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 4	5784 x 8660	12 mm	4.17 x 4.17 um	No

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Camera 5	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 6	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 7	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 8	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 9	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 10	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 11	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 12	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 13	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 14	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 15	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 16	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 17	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 18	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 19	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 20	5784 x 8660	12 mm	4.17 x 4.17 um	No
Camera 21	5784 x 8660	12 mm	4.17 x 4.17 um	No

Table 1. Cameras.

Camera Calibration

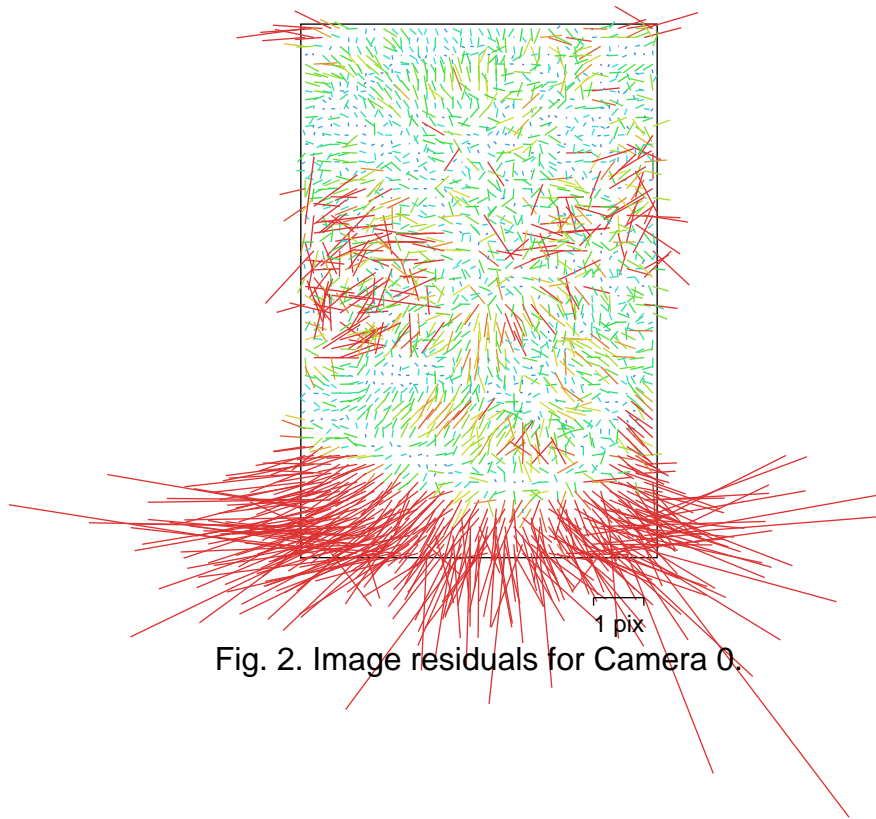


Fig. 2. Image residuals for Camera 0.

Camera 0

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2991.22	0.058	1.00	0.11	-0.09	-0.84	0.80	-0.73	0.06	0.20
Cx	-16.9291	0.043		1.00	0.03	-0.05	0.04	-0.04	0.70	0.05
Cy	-12.9092	0.073			1.00	-0.04	0.01	-0.04	0.01	0.75
K1	-0.0365168	4.2e-05				1.00	-0.97	0.92	-0.02	-0.22
K2	0.0106625	3e-05					1.00	-0.99	0.03	0.23
K3	-0.00076734	6.5e-06						1.00	-0.02	-0.24
P1	0.000180323	4.3e-06							1.00	0.03
P2	-0.000373031	6.8e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

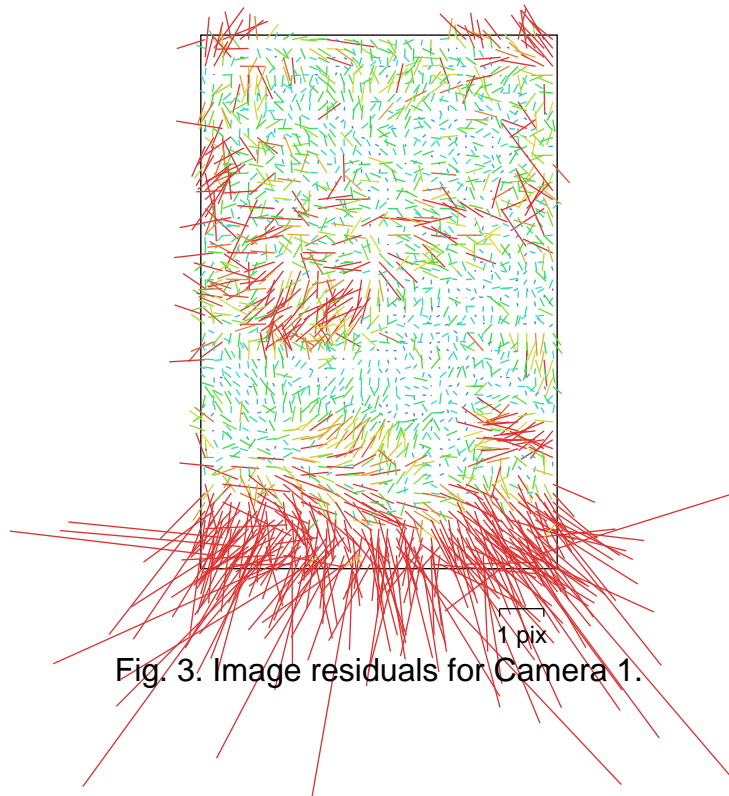


Fig. 3. Image residuals for Camera 1.

Camera 1
48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2989.84	0.066	1.00	0.09	-0.13	-0.81	0.77	-0.69	0.04	0.27
Cx	6.20743	0.045		1.00	0.05	-0.02	0.05	-0.06	0.64	0.11
Cy	33.2435	0.08			1.00	-0.08	0.04	-0.06	0.07	0.73
K1	-0.0323664	5.3e-05				1.00	-0.97	0.92	-0.04	-0.26
K2	0.00706255	4.2e-05					1.00	-0.98	0.05	0.24
K3	5.65607e-05	9.9e-06						1.00	-0.05	-0.22
P1	-0.000735198	4.8e-06							1.00	0.08
P2	-0.000265218	7.4e-06								1.00

Table 3. Calibration coefficients and correlation matrix.

Camera Calibration

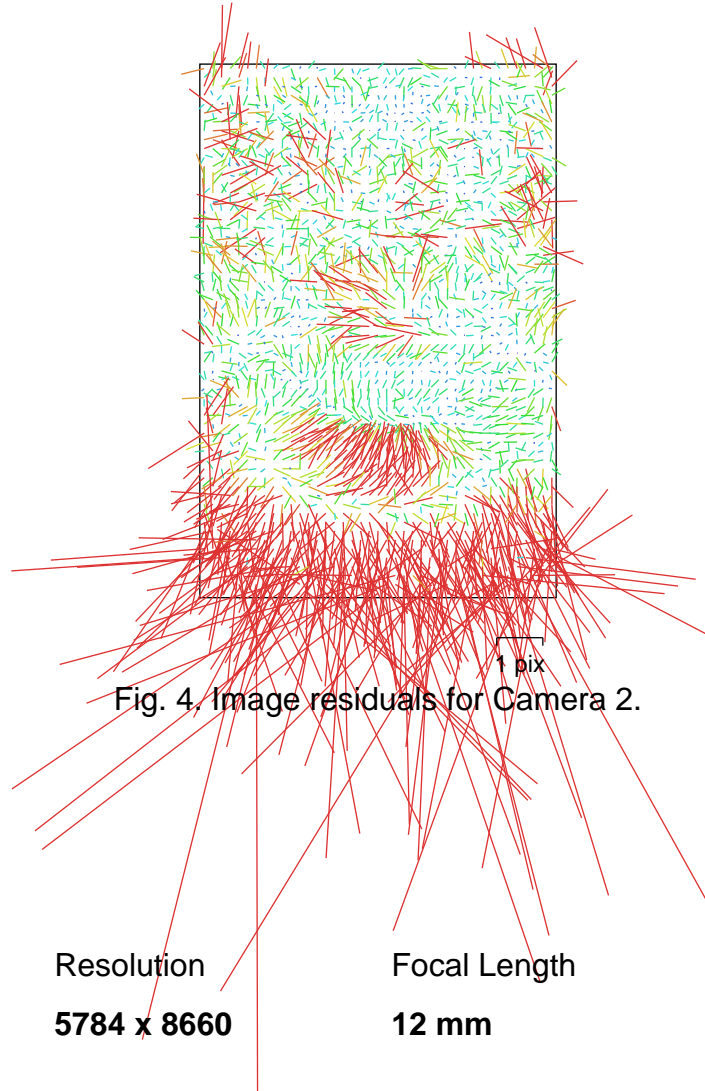


Fig. 4. Image residuals for Camera 2.

Camera 2
48 images

Type

Frame

Resolution

5784 x 8660

Focal Length

12 mm

Pixel Size

4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2986.78	0.065	1.00	0.03	-0.26	-0.75	0.71	-0.63	0.04	0.20
Cx	-15.8593	0.046		1.00	-0.01	0.03	-0.00	-0.01	0.65	0.06
Cy	58.8562	0.083			1.00	-0.00	-0.07	0.05	0.01	0.69
K1	-0.0329073	4.9e-05				1.00	-0.96	0.90	-0.02	-0.22
K2	0.00738396	4.1e-05					1.00	-0.98	0.02	0.19
K3	-9.23266e-05	9.4e-06						1.00	-0.02	-0.17
P1	-0.000918626	4.9e-06							1.00	0.03
P2	-0.000217016	7.4e-06								1.00

Table 4. Calibration coefficients and correlation matrix.

Camera Calibration

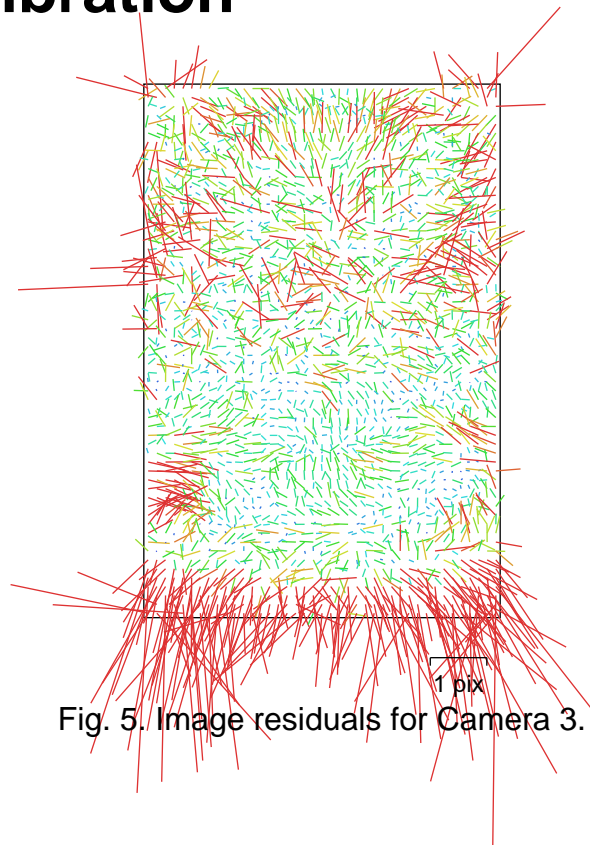


Fig. 5. Image residuals for Camera 3.

Camera 3

48 images

Type

Resolution

Focal Length

Pixel Size

Frame

5784 x 8660

12 mm

4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	3000.14	0.053	1.00	-0.02	-0.12	-0.79	0.74	-0.66	0.00	0.20
Cx	-9.63577	0.035		1.00	0.04	0.01	-0.01	0.00	0.71	0.01
Cy	-14.171	0.072			1.00	-0.11	0.06	-0.07	0.03	0.81
K1	-0.0307487	4.1e-05				1.00	-0.97	0.91	0.00	-0.22
K2	0.00655441	3.3e-05					1.00	-0.98	-0.01	0.17
K3	9.89144e-05	7.9e-06						1.00	0.01	-0.14
P1	0.000553367	3.9e-06							1.00	0.01
P2	-0.000294255	6.4e-06								1.00

Table 5. Calibration coefficients and correlation matrix.

Camera Calibration

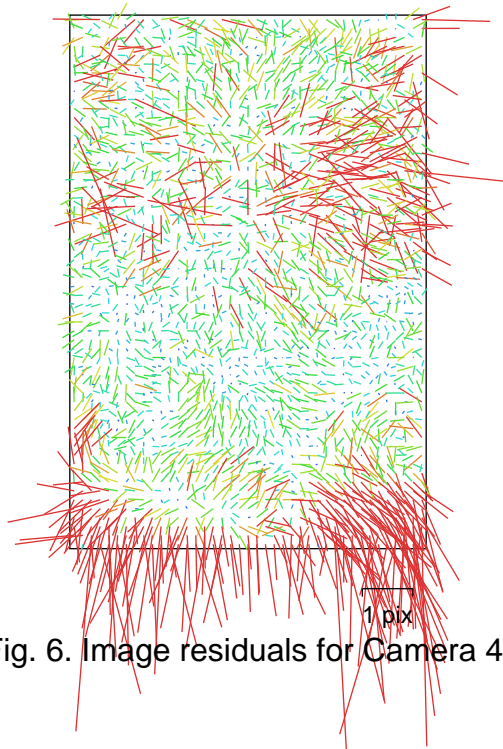


Fig. 6. Image residuals for Camera 4.

Camera 4
48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2998.5	0.055	1.00	-0.06	-0.17	-0.79	0.73	-0.65	-0.02	0.20
Cx	-6.05311	0.038		1.00	-0.05	0.02	-0.02	0.02	0.68	-0.11
Cy	0.452918	0.071			1.00	-0.10	0.06	-0.08	-0.07	0.78
K1	-0.030675	3.9e-05				1.00	-0.97	0.91	0.01	-0.24
K2	0.0068556	3e-05					1.00	-0.98	0.00	0.19
K3	-1.76054e-05	6.8e-06						1.00	-0.01	-0.17
P1	0.00071061	4e-06							1.00	-0.09
P2	-0.000371366	6.3e-06								1.00

Table 6. Calibration coefficients and correlation matrix.

Camera Calibration

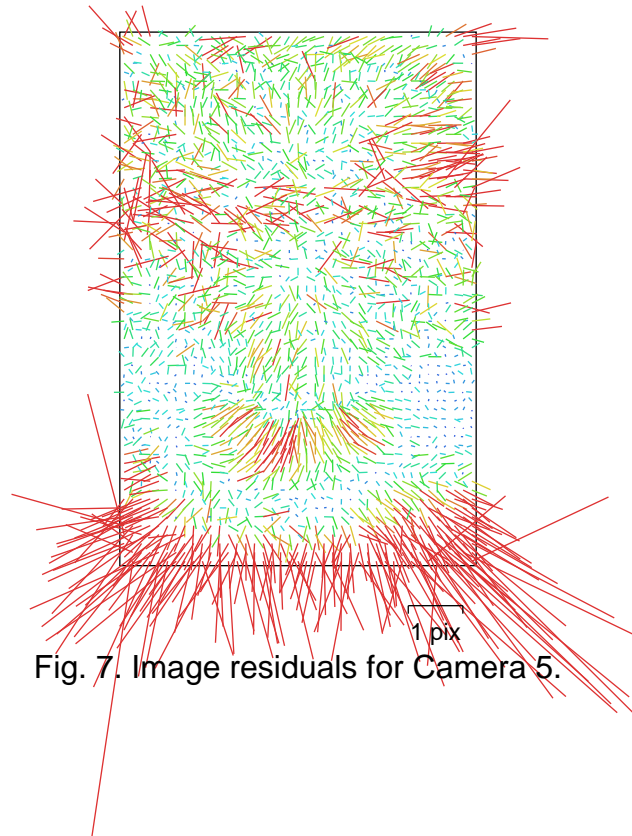


Fig. 7. Image residuals for Camera 5.

Camera 5
48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2988.5	0.05	1.00	-0.04	-0.19	-0.84	0.80	-0.72	-0.01	0.18
Cx	28.9923	0.036		1.00	-0.09	0.02	-0.01	0.01	0.66	-0.08
Cy	54.3311	0.065			1.00	-0.02	-0.02	-0.01	-0.08	0.76
K1	-0.0329212	3.4e-05				1.00	-0.97	0.92	0.02	-0.21
K2	0.00854911	2.4e-05					1.00	-0.98	-0.02	0.18
K3	-0.000420714	5e-06						1.00	0.02	-0.17
P1	-0.000786704	3.6e-06							1.00	-0.06
P2	0.000123626	5.6e-06								1.00

Table 7. Calibration coefficients and correlation matrix.

Camera Calibration

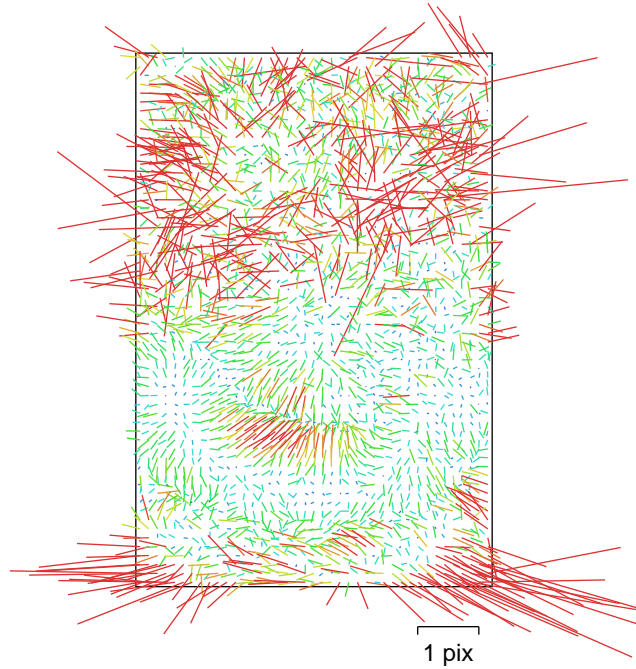


Fig. 8. Image residuals for Camera 6.

Camera 6

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2984.99	0.044	1.00	0.09	-0.23	-0.76	0.72	-0.63	0.02	0.08
Cx	-24.5702	0.037		1.00	0.07	-0.05	0.04	-0.03	0.73	0.11
Cy	-12.6887	0.07			1.00	-0.10	0.04	-0.05	0.11	0.84
K1	-0.0322609	3.1e-05				1.00	-0.96	0.90	-0.02	-0.20
K2	0.00757001	2.4e-05					1.00	-0.98	0.02	0.12
K3	-0.00020384	5.6e-06						1.00	-0.01	-0.09
P1	0.000249994	3.5e-06							1.00	0.11
P2	0.000210319	5.9e-06								1.00

Table 8. Calibration coefficients and correlation matrix.

Camera Calibration

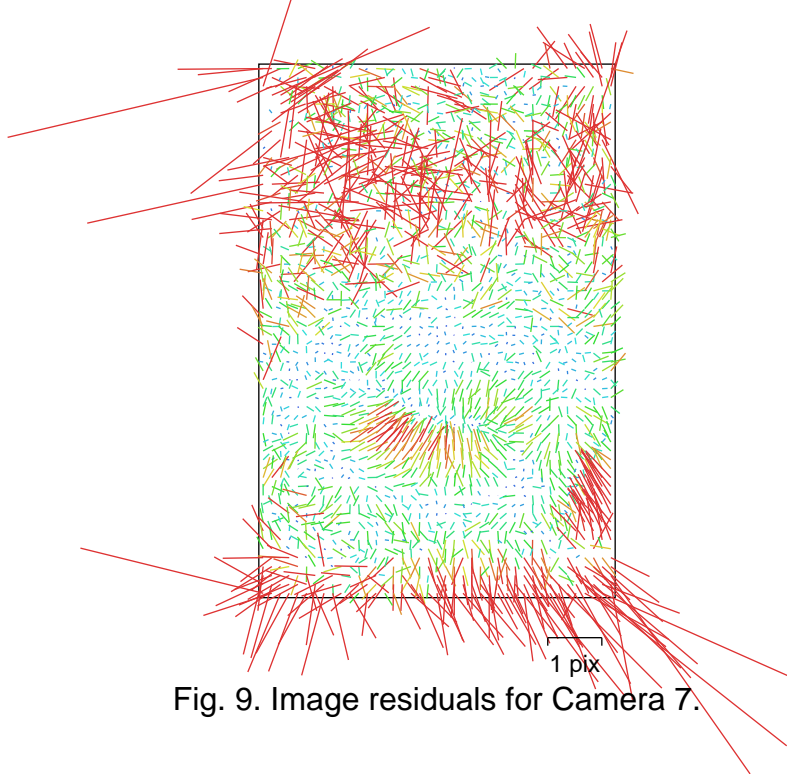


Fig. 9. Image residuals for Camera 7.

Camera 7

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2992.68	0.048	1.00	0.09	-0.31	-0.61	0.57	-0.49	0.03	0.02
Cx	18.8788	0.045		1.00	-0.03	-0.02	0.03	-0.03	0.79	-0.00
Cy	25.611	0.075			1.00	-0.13	0.06	-0.05	-0.02	0.82
K1	-0.0296175	3.6e-05				1.00	-0.96	0.88	-0.00	-0.18
K2	0.00580447	3.2e-05					1.00	-0.98	0.01	0.09
K3	0.000232439	8.1e-06						1.00	-0.02	-0.05
P1	-0.000386351	4.3e-06							1.00	-0.02
P2	0.000325427	6.3e-06								1.00

Table 9. Calibration coefficients and correlation matrix.

Camera Calibration

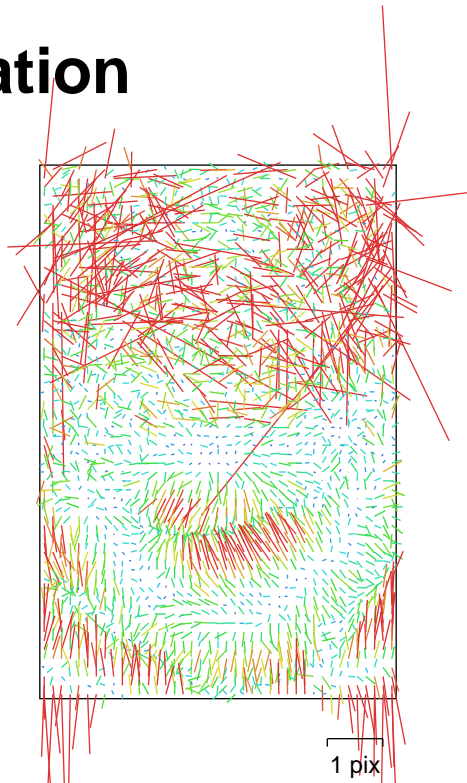


Fig. 10. Image residuals for Camera 8.

Camera 8

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2956.15	0.054	1.00	0.03	-0.37	-0.54	0.56	-0.52	0.02	0.01
Cx	21.3495	0.058		1.00	-0.02	0.02	-0.01	0.01	0.87	-0.01
Cy	24.8713	0.082			1.00	-0.10	0.01	0.00	-0.02	0.73
K1	-0.0344612	3.3e-05				1.00	-0.95	0.88	0.02	-0.24
K2	0.00824031	2.5e-05					1.00	-0.98	-0.01	0.08
K3	-0.000411957	5.5e-06						1.00	0.01	-0.05
P1	-0.000495879	5.5e-06							1.00	-0.02
P2	-7.11293e-05	6.5e-06								1.00

Table 10. Calibration coefficients and correlation matrix.

Camera Calibration

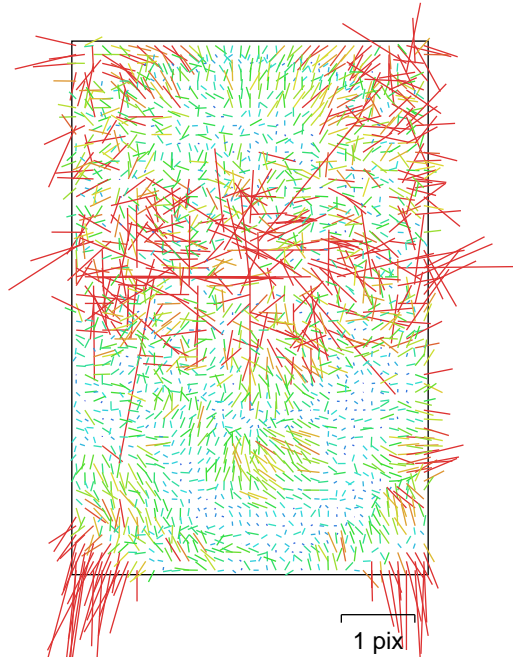


Fig. 11. Image residuals for Camera 9.

Camera 9

48 images

Type

Resolution

Focal Length

Pixel Size

Frame

5784 x 8660

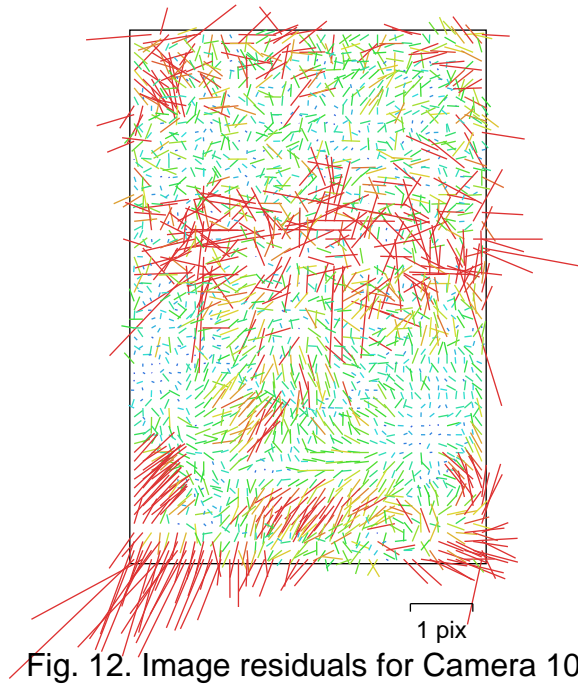
12 mm

4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2980.08	0.045	1.00	-0.01	-0.08	-0.85	0.81	-0.74	-0.01	0.13
Cx	-19.4528	0.03		1.00	0.04	0.01	-0.01	0.01	0.77	0.04
Cy	-10.335	0.062			1.00	-0.09	0.05	-0.04	0.06	0.86
K1	-0.0349046	3e-05				1.00	-0.97	0.92	0.00	-0.19
K2	0.0101281	2.1e-05					1.00	-0.98	-0.01	0.13
K3	-0.000798619	4.5e-06						1.00	0.02	-0.11
P1	0.000391087	3.2e-06							1.00	0.07
P2	-0.000156982	5.4e-06								1.00

Table 11. Calibration coefficients and correlation matrix.

Camera Calibration



Camera 10

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2991.76	0.049	1.00	-0.07	-0.10	-0.85	0.79	-0.72	-0.03	0.16
Cx	-9.7577	0.034		1.00	-0.03	0.05	-0.04	0.03	0.73	-0.08
Cy	-12.8435	0.066			1.00	-0.09	0.04	-0.02	-0.05	0.84
K1	-0.0324766	3.5e-05				1.00	-0.97	0.92	0.03	-0.21
K2	0.0087476	2.6e-05					1.00	-0.98	-0.03	0.13
K3	-0.000481477	5.8e-06						1.00	0.02	-0.10
P1	3.09303e-05	3.6e-06							1.00	-0.06
P2	-0.000640908	5.9e-06								1.00

Table 12. Calibration coefficients and correlation matrix.

Camera Calibration

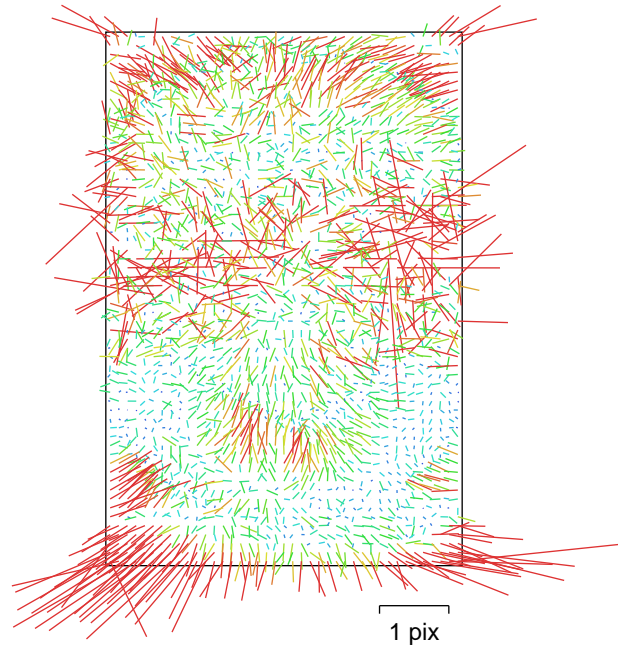


Fig. 13. Image residuals for Camera 11.

Camera 11

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2991.78	0.044	1.00	-0.04	-0.08	-0.86	0.81	-0.73	-0.03	0.18
Cx	20.5913	0.032		1.00	-0.06	0.04	-0.03	0.03	0.69	-0.06
Cy	27.0815	0.063			1.00	-0.10	0.06	-0.07	-0.05	0.84
K1	-0.0336155	2.9e-05				1.00	-0.97	0.92	0.04	-0.24
K2	0.00915831	2e-05					1.00	-0.98	-0.04	0.17
K3	-0.000546703	4.2e-06						1.00	0.04	-0.15
P1	-0.00048843	3.2e-06							1.00	-0.04
P2	-0.00029432	5.4e-06								1.00

Table 13. Calibration coefficients and correlation matrix.

Camera Calibration

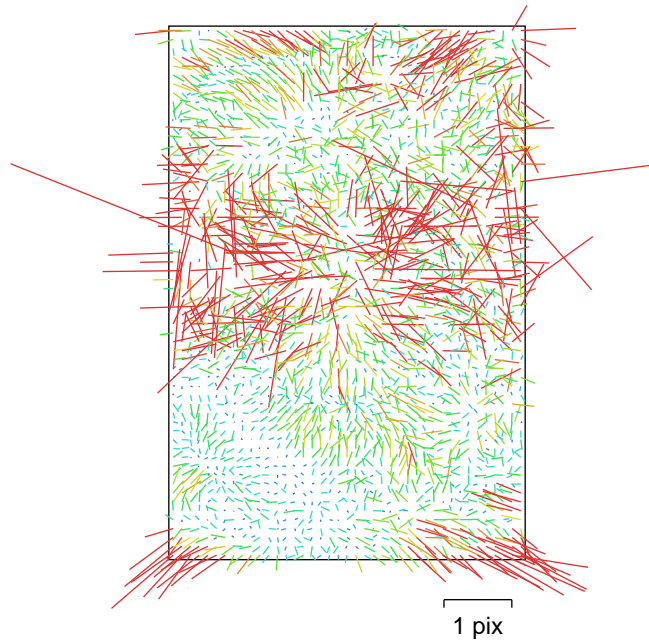


Fig. 14. Image residuals for Camera 12.

Camera 12

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2985.61	0.045	1.00	0.05	-0.08	-0.83	0.78	-0.71	0.01	0.12
Cx	-17.5588	0.034		1.00	0.03	-0.06	0.04	-0.03	0.72	0.03
Cy	-8.60266	0.066			1.00	-0.12	0.08	-0.07	0.03	0.88
K1	-0.0349629	2.9e-05				1.00	-0.97	0.92	-0.03	-0.22
K2	0.0104155	1.9e-05					1.00	-0.98	0.03	0.15
K3	-0.000852489	4.1e-06						1.00	-0.02	-0.13
P1	0.000208902	3.2e-06							1.00	0.01
P2	-0.000107669	5.7e-06								1.00

Table 14. Calibration coefficients and correlation matrix.

Camera Calibration

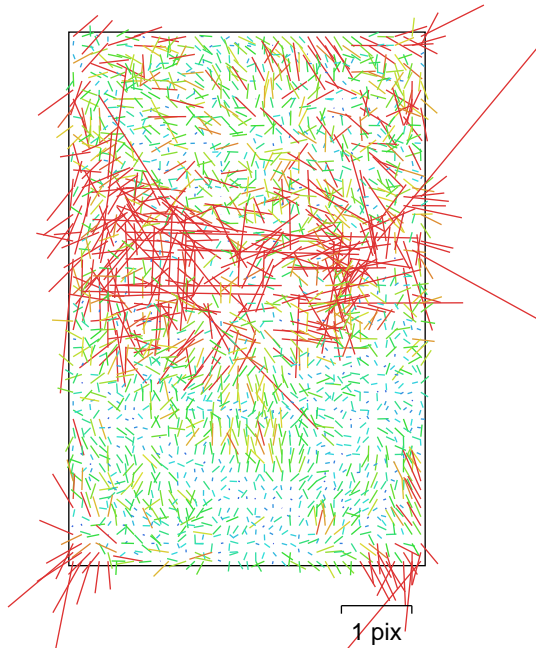


Fig. 15. Image residuals for Camera 13.

Camera 13

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2978.11	0.049	1.00	-0.02	-0.08	-0.86	0.82	-0.75	0.01	0.11
Cx	10.5421	0.036		1.00	0.03	-0.00	-0.00	-0.00	0.76	-0.01
Cy	22.4666	0.068			1.00	-0.09	0.04	-0.02	-0.01	0.88
K1	-0.0342239	3.5e-05				1.00	-0.97	0.92	-0.02	-0.18
K2	0.00956056	2.5e-05					1.00	-0.98	0.02	0.10
K3	-0.000646968	5.6e-06						1.00	-0.02	-0.07
P1	-3.96063e-05	3.8e-06							1.00	-0.03
P2	-1.43738e-05	5.9e-06								1.00

Table 15. Calibration coefficients and correlation matrix.

Camera Calibration

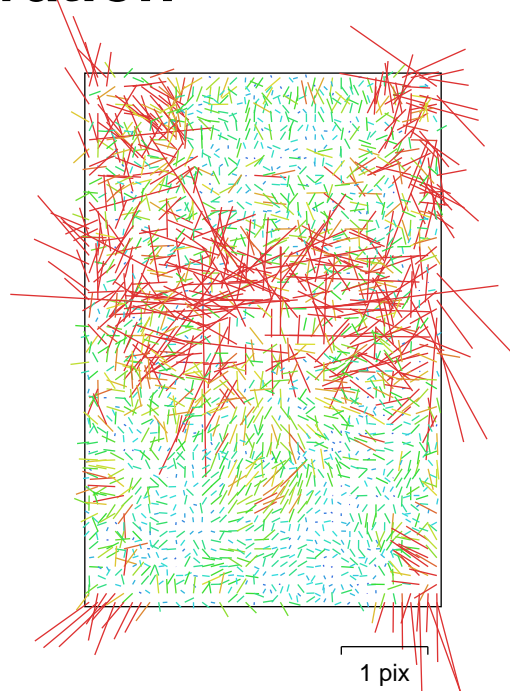


Fig. 16. Image residuals for Camera 14.

Camera 14

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2991.74	0.045	1.00	-0.01	-0.08	-0.86	0.82	-0.75	0.00	0.10
Cx	9.32617	0.031		1.00	0.03	0.02	-0.02	0.01	0.79	0.03
Cy	46.2204	0.063			1.00	-0.10	0.05	-0.04	0.02	0.87
K1	-0.0348369	3e-05				1.00	-0.97	0.92	0.00	-0.18
K2	0.0104663	2.1e-05					1.00	-0.99	-0.00	0.11
K3	-0.000840176	4.4e-06						1.00	0.01	-0.08
P1	-0.000438188	3.3e-06							1.00	0.02
P2	0.000159368	5.5e-06								1.00

Table 16. Calibration coefficients and correlation matrix.

Camera Calibration

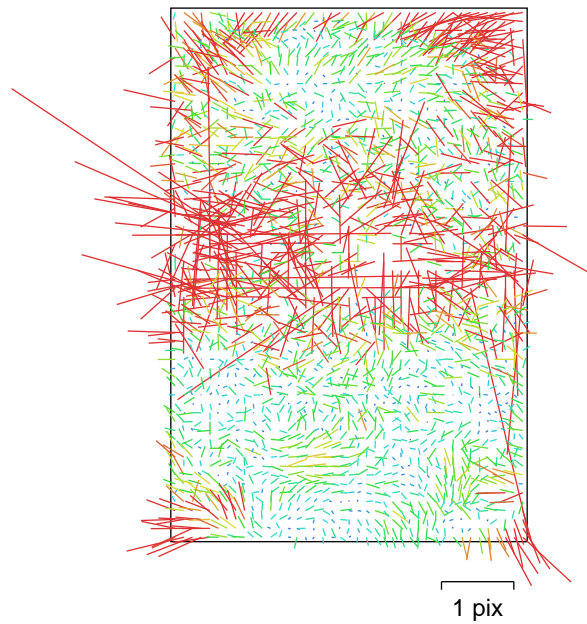


Fig. 17. Image residuals for Camera 15.

Camera 15

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2991.13	0.047	1.00	-0.01	-0.06	-0.86	0.84	-0.77	-0.00	0.08
Cx	-8.88727	0.035		1.00	0.05	0.00	-0.00	0.01	0.82	0.05
Cy	-23.5364	0.066			1.00	-0.11	0.06	-0.03	0.04	0.88
K1	-0.0352113	3.1e-05				1.00	-0.97	0.92	-0.01	-0.18
K2	0.0110063	2e-05					1.00	-0.99	0.01	0.10
K3	-0.000982561	4.1e-06						1.00	-0.00	-0.07
P1	0.000302374	3.6e-06							1.00	0.06
P2	-0.00055904	5.9e-06								1.00

Table 17. Calibration coefficients and correlation matrix.

Camera Calibration

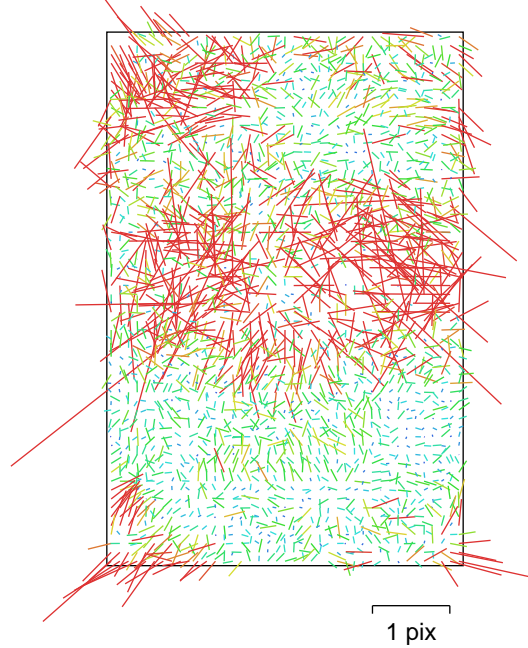


Fig. 18. Image residuals for Camera 16.

Camera 16

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2980.26	0.052	1.00	-0.02	-0.06	-0.88	0.84	-0.77	-0.03	0.10
Cx	-6.21307	0.038		1.00	-0.01	0.01	0.00	-0.01	0.79	-0.01
Cy	-12.4994	0.067			1.00	-0.07	0.02	-0.00	0.00	0.86
K1	-0.0353553	3.5e-05				1.00	-0.97	0.93	0.04	-0.15
K2	0.0101918	2.4e-05					1.00	-0.99	-0.04	0.08
K3	-0.00082941	5e-06						1.00	0.03	-0.05
P1	0.000410336	4e-06							1.00	0.01
P2	-0.00030254	6e-06								1.00

Table 18. Calibration coefficients and correlation matrix.

Camera Calibration

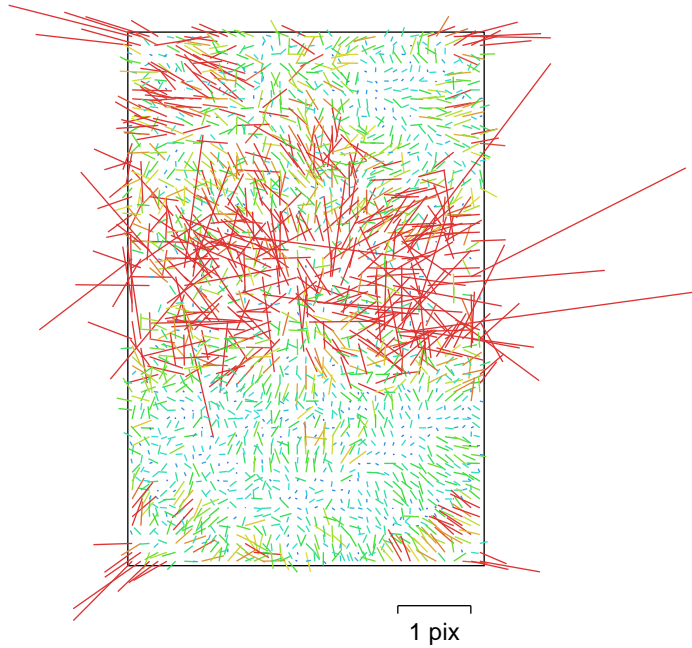


Fig. 19. Image residuals for Camera 17.

Camera 17

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2990.16	0.05	1.00	0.00	-0.05	-0.88	0.82	-0.75	-0.01	0.10
Cx	17.3349	0.036		1.00	-0.02	-0.01	0.03	-0.03	0.74	-0.03
Cy	39.6062	0.065			1.00	-0.06	0.04	-0.03	-0.03	0.86
K1	-0.0353655	3.2e-05				1.00	-0.97	0.93	0.02	-0.14
K2	0.0107423	2.1e-05					1.00	-0.99	-0.01	0.09
K3	-0.000888913	4.3e-06						1.00	0.01	-0.07
P1	-0.000110668	3.7e-06							1.00	-0.03
P2	0.000234123	5.7e-06								1.00

Table 19. Calibration coefficients and correlation matrix.

Camera Calibration

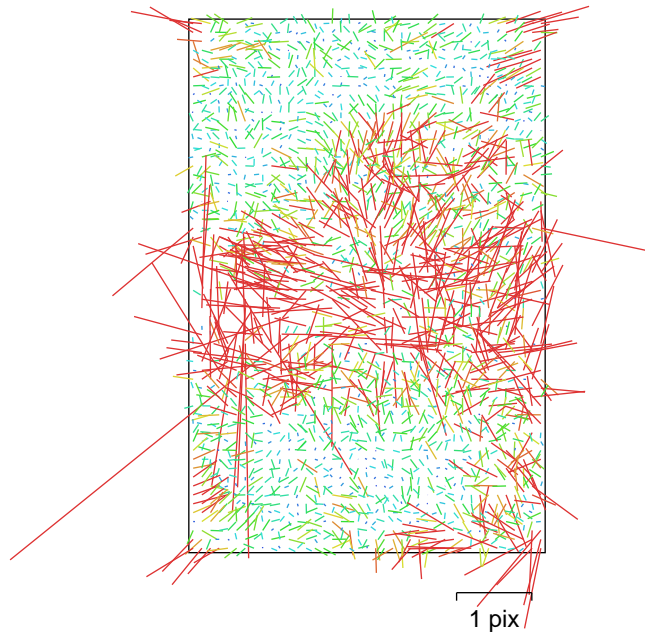


Fig. 20. Image residuals for Camera 18.

Camera 18

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2989.46	0.058	1.00	0.07	0.01	-0.85	0.82	-0.75	0.06	-0.08
Cx	-17.9406	0.049		1.00	-0.17	-0.07	0.06	-0.06	0.76	-0.22
Cy	-26.8938	0.069			1.00	0.08	-0.06	0.07	-0.16	0.87
K1	-0.0359404	3.7e-05				1.00	-0.97	0.93	-0.04	0.13
K2	0.011052	2.4e-05					1.00	-0.99	0.05	-0.12
K3	-0.000955201	4.8e-06						1.00	-0.05	0.11
P1	0.000198204	4.4e-06							1.00	-0.20
P2	6.63724e-06	6.3e-06								1.00

Table 20. Calibration coefficients and correlation matrix.

Camera Calibration

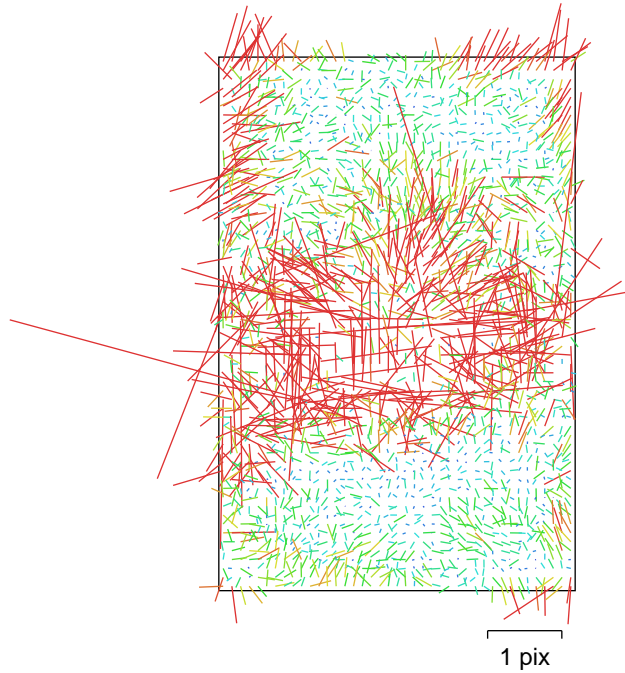


Fig. 21. Image residuals for Camera 19.

Camera 19

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2987.61	0.062	1.00	0.05	-0.02	-0.87	0.84	-0.78	0.05	-0.12
Cx	19.6742	0.048		1.00	-0.07	-0.05	0.04	-0.05	0.81	-0.09
Cy	27.3307	0.069			1.00	0.04	-0.03	0.03	-0.07	0.87
K1	-0.0359749	4.1e-05				1.00	-0.98	0.93	-0.07	0.12
K2	0.0111378	2.8e-05					1.00	-0.99	0.06	-0.11
K3	-0.000949488	5.9e-06						1.00	-0.06	0.10
P1	-0.00037205	4.8e-06							1.00	-0.08
P2	0.000235549	6.3e-06								1.00

Table 21. Calibration coefficients and correlation matrix.

Camera Calibration

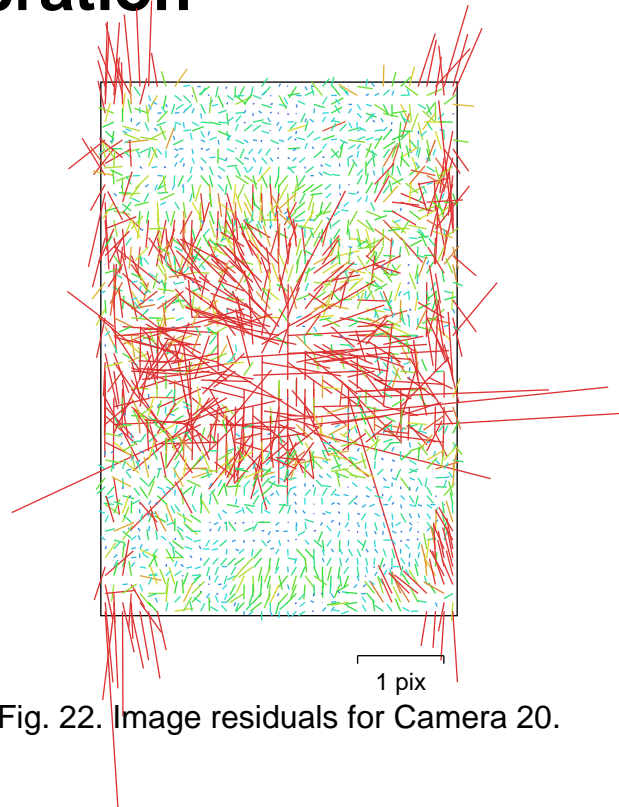


Fig. 22. Image residuals for Camera 20.

Camera 20

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2987.82	0.058	1.00	-0.02	-0.01	-0.82	0.82	-0.76	-0.01	-0.13
Cx	18.2578	0.047		1.00	0.03	0.01	-0.01	0.01	0.85	0.04
Cy	26.6037	0.068			1.00	-0.04	0.03	-0.02	0.03	0.87
K1	-0.0360053	3.8e-05				1.00	-0.97	0.93	-0.00	0.07
K2	0.0110514	2.5e-05					1.00	-0.99	0.00	-0.08
K3	-0.000920478	5.2e-06						1.00	-0.00	0.08
P1	0.000277452	4.6e-06							1.00	0.04
P2	0.000604472	6e-06								1.00

Table 22. Calibration coefficients and correlation matrix.

Camera Calibration

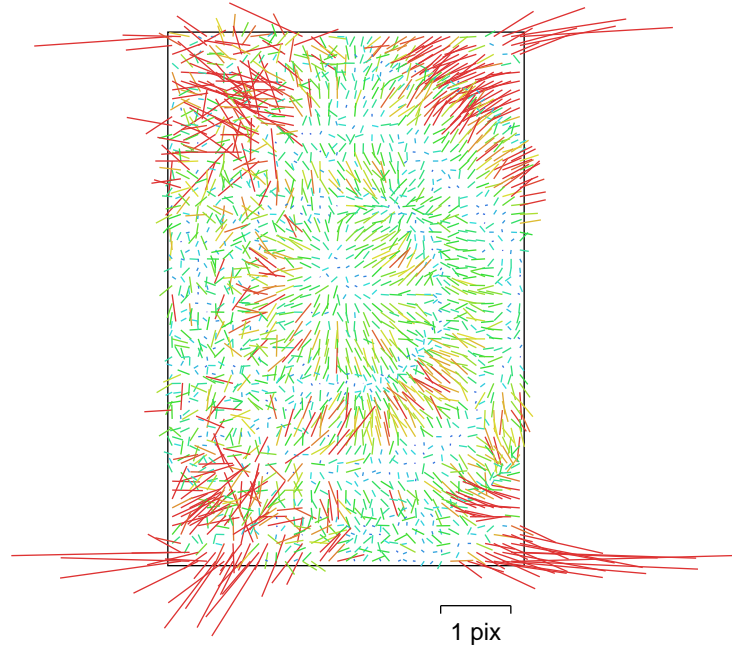


Fig. 23. Image residuals for Camera 21.

Camera 21

48 images

Type	Resolution	Focal Length	Pixel Size
Frame	5784 x 8660	12 mm	4.17 x 4.17 um

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	2986.46	0.087	1.00	-0.55	-0.04	-0.10	0.13	-0.10	-0.03	-0.02
Cx	-15.2547	0.057		1.00	0.01	-0.05	-0.01	0.00	0.48	0.01
Cy	-28.0573	0.055			1.00	-0.00	0.00	-0.01	-0.02	0.82
K1	-0.0319482	2.3e-05				1.00	-0.94	0.87	-0.21	-0.00
K2	0.00825744	1.8e-05					1.00	-0.98	0.06	0.00
K3	-0.000335815	4.2e-06						1.00	-0.04	-0.01
P1	0.000273284	3.3e-06							1.00	-0.01
P2	-8.6266e-05	4.5e-06								1.00

Table 23. Calibration coefficients and correlation matrix.

Scale Bars

Label	Distance (m)	Error (m)
002a. 4-5	0.250057	5.73133e-05
002b. 5-6	0.24996	6.04993e-05
005a. 12-13	0.250032	5.22721e-05
005b. 13-14	0.249945	5.54021e-05
008a. 20-21	0.249966	-6.38309e-05
008b. 21-22	0.249711	-0.000168893
Total		8.69347e-05

Table 24. Control scale bars.

Digital Elevation Model

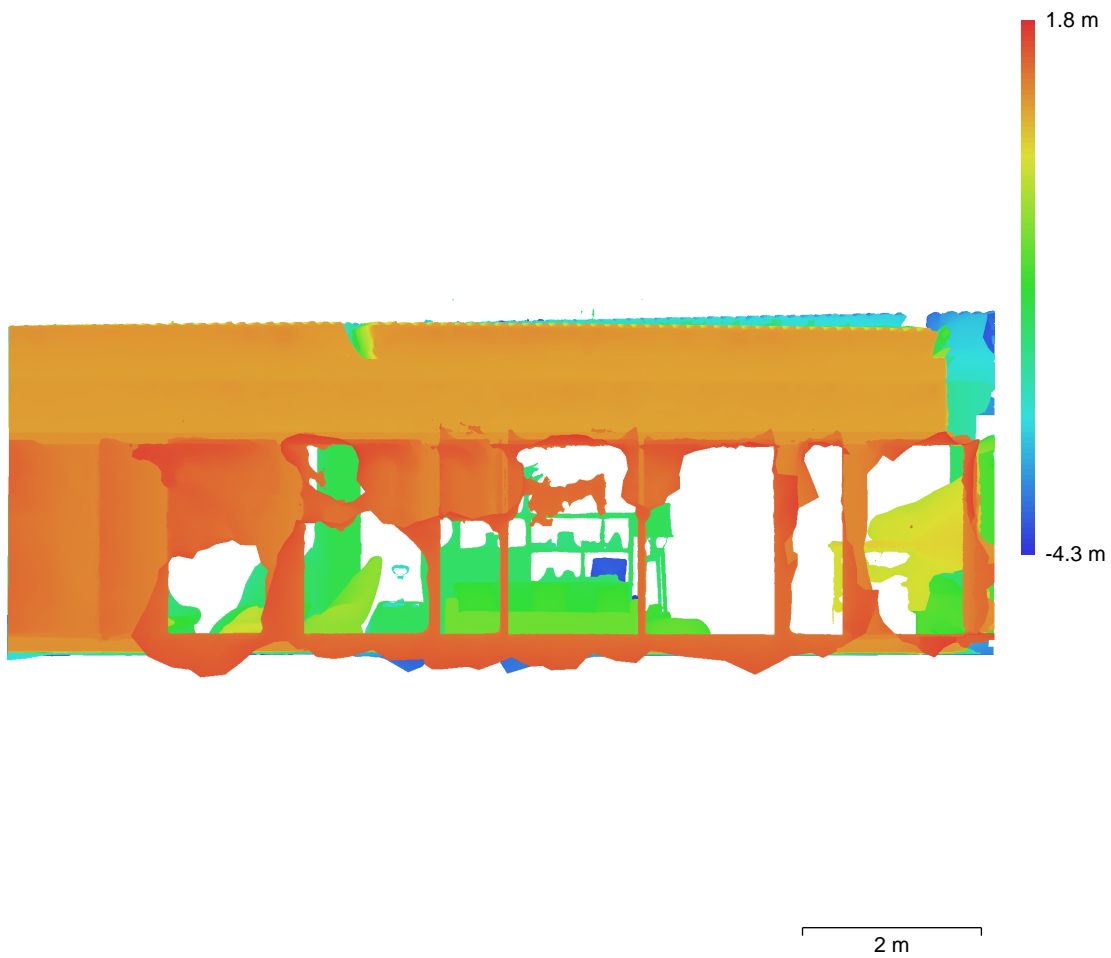


Fig. 24. Reconstructed digital elevation model.

Resolution: 3.34 mm/pix
Point density: 8.98 points/cm²

Processing Parameters

General

Cameras	1056
Aligned cameras	1056
Markers	9
Scale bars	6
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	920,708 of 2,899,717
RMS reprojection error	0.396065 (1.13913 pix)
Max reprojection error	1.74888 (12.6698 pix)
Mean key point size	2.72474 pix
Point colors	3 bands, uint8
Key points	5.21 GB
Average tie point multiplicity	4.54932

Alignment parameters

Accuracy	Highest
Generic preselection	Yes
Reference preselection	Estimated
Key point limit	60,000
Key point limit per Mpx	1,000
Tie point limit	0
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	No
Matching time	27 minutes 51 seconds
Matching memory usage	3.85 GB
Alignment time	10 minutes 37 seconds
Alignment memory usage	19.71 GB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	8 seconds
Date created	2023:08:25 04:21:09
Software version	2.0.2.16404
File size	281.14 MB

Depth Maps

Count	961
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Max neighbors	16
Processing time	22 minutes 36 seconds
Memory usage	4.92 GB
Date created	2023:08:26 04:11:44
Software version	2.0.2.16404
File size	2.71 GB

Point Cloud

Points	55,597,442
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Point attributes

Color	3 bands, uint8
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Normal

Point classes

Created (never classified) 55,597,442

Depth maps generation parameters

Quality Medium
Filtering mode Mild
Max neighbors 16
Processing time 22 minutes 36 seconds
Memory usage 4.92 GB

Point cloud generation parameters

Processing time 1 hours 21 minutes
Memory usage 41.15 GB
Date created 2023:08:26 05:34:04
Software version 2.0.2.16404
File size 740.14 MB

Model

Faces 1,934,859
Vertices 969,692
Vertex colors 3 bands, uint8
Texture 16,384 x 16,384, 4 bands, uint8

Depth maps generation parameters

Quality Medium
Filtering mode Mild
Max neighbors 16
Processing time 22 minutes 36 seconds
Memory usage 4.92 GB

Reconstruction parameters

Surface type Arbitrary
Source data Depth maps
Interpolation Enabled
Strict volumetric masks No
Processing time 14 minutes 24 seconds
Memory usage 6.60 GB

Texturing parameters

Mapping mode Generic
Blending mode Mosaic
Texture size 16,384
Enable hole filling Yes
Enable ghosting filter Yes
UV mapping time 4 minutes 55 seconds
UV mapping memory usage 2.11 GB
Blending time 23 minutes 54 seconds
Blending memory usage 10.80 GB
Blending GPU memory usage 7.56 GB
Date created 2023:08:26 05:48:54
Software version 2.0.2.16404
File size 290.64 MB

System

Software name Agisoft Metashape Professional
Software version 2.0.2 build 16404
OS Windows 64 bit
RAM 255.87 GB
CPU AMD Ryzen Threadripper 3970X 32-Core Processor
GPU(s) NVIDIA GeForce RTX 3090
NVIDIA GeForce RTX 3090
NVIDIA GeForce RTX 3090