

Agisoft Metashape

Processing Report

26 August 2023



Survey Data

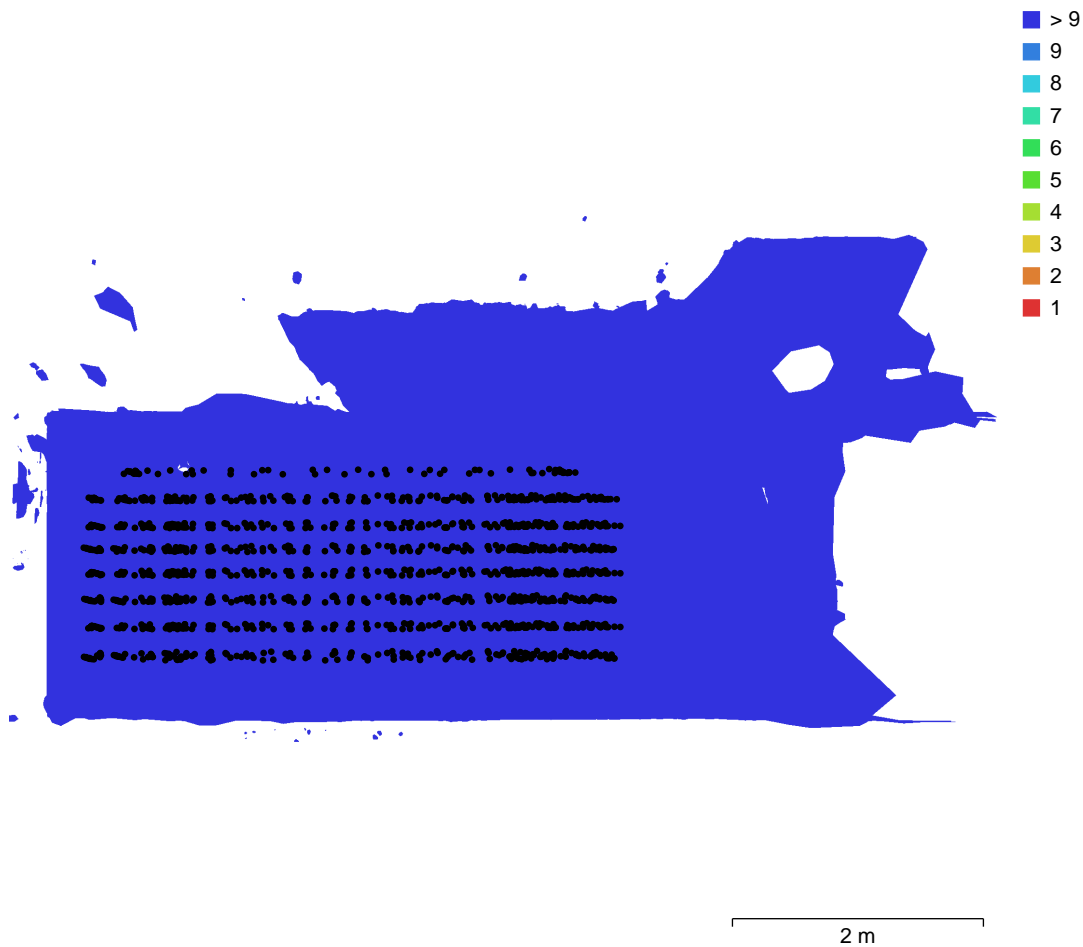


Fig. 1. Camera locations and image overlap.

Number of images:	1,562	Camera stations:	1,562
Flying altitude:	79 cm	Tie points:	1,290,323
Ground resolution:	0.349 mm/pix	Projections:	3,629,731
Coverage area:	21.2 m ²	Reprojection error:	0.872 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

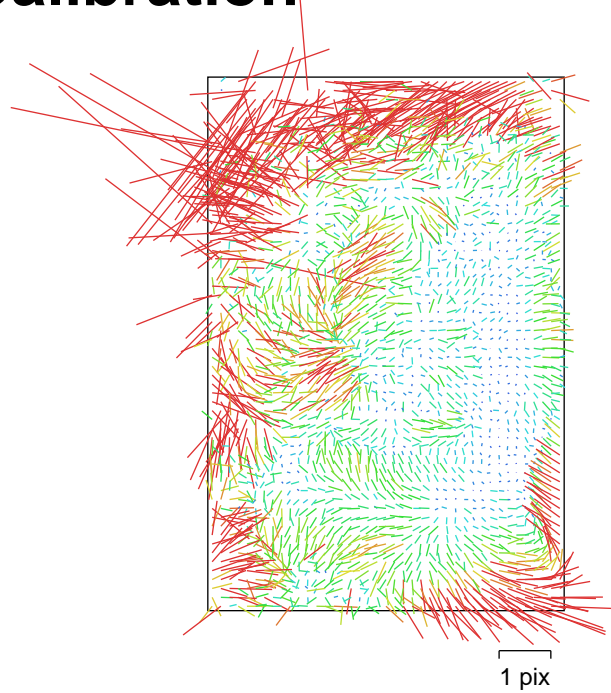


Fig. 2. Image residuals for Camera 0.

Camera 0

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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	2953.64	0.031	1.00	0.12	0.02	-0.82	0.74	-0.64	0.11	0.16
Cx	-17.8822	0.031		1.00	-0.12	0.00	0.01	-0.00	0.76	-0.02
Cy	-15.6057	0.036			1.00	-0.02	0.03	-0.03	-0.10	0.75
K1	-0.0350556	2.4e-05				1.00	-0.96	0.89	-0.07	-0.09
K2	0.00809635	2e-05					1.00	-0.98	0.03	0.03
K3	-0.00054406	4.7e-06						1.00	-0.02	-0.00
P1	0.000468323	3e-06							1.00	0.04
P2	-0.000231658	3.7e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

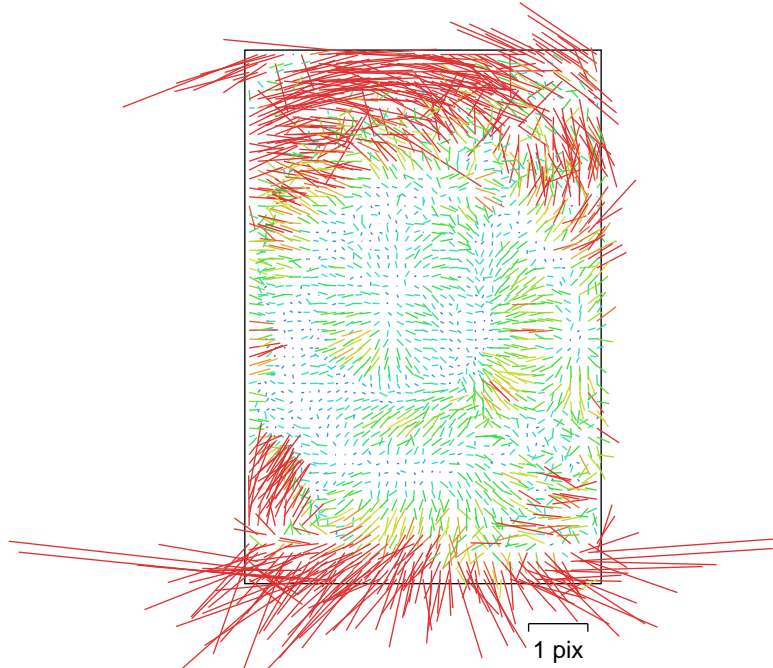


Fig. 3. Image residuals for Camera 1.

Camera 1

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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	2955.16	0.023	1.00	0.02	-0.02	-0.72	0.68	-0.59	0.04	0.04
Cx	7.40984	0.032		1.00	-0.00	-0.02	0.01	-0.01	0.87	-0.04
Cy	28.212	0.036			1.00	-0.02	0.02	-0.02	0.01	0.87
K1	-0.0300331	2.3e-05				1.00	-0.96	0.89	0.03	0.01
K2	0.00317263	2.4e-05					1.00	-0.98	-0.01	-0.02
K3	0.000756436	7.1e-06						1.00	0.01	0.01
P1	-0.000849677	3.1e-06							1.00	-0.02
P2	-0.000139412	3.7e-06								1.00

Table 3. Calibration coefficients and correlation matrix.

Camera Calibration

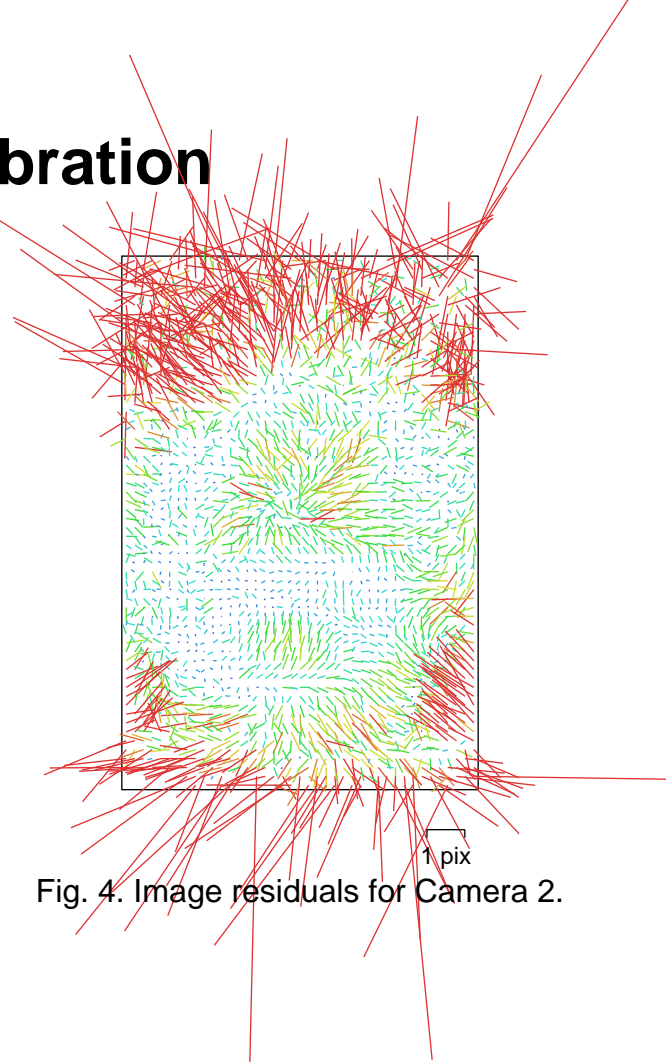


Fig. 4. Image residuals for Camera 2.

Camera 2
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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	2957.26	0.036	1.00	-0.01	0.10	-0.83	0.74	-0.65	0.03	0.24
Cx	-2.86229	0.045		1.00	0.06	0.03	-0.02	0.02	0.86	0.06
Cy	45.3549	0.044			1.00	-0.06	0.03	-0.01	0.05	0.83
K1	-0.0341637	3.4e-05				1.00	-0.96	0.89	-0.01	-0.16
K2	0.0052441	3.2e-05					1.00	-0.98	0.01	0.09
K3	0.000280335	8.7e-06						1.00	-0.01	-0.05
P1	-0.00110572	4.6e-06							1.00	0.05
P2	0.000254357	4.9e-06								1.00

Table 4. Calibration coefficients and correlation matrix.

Camera Calibration

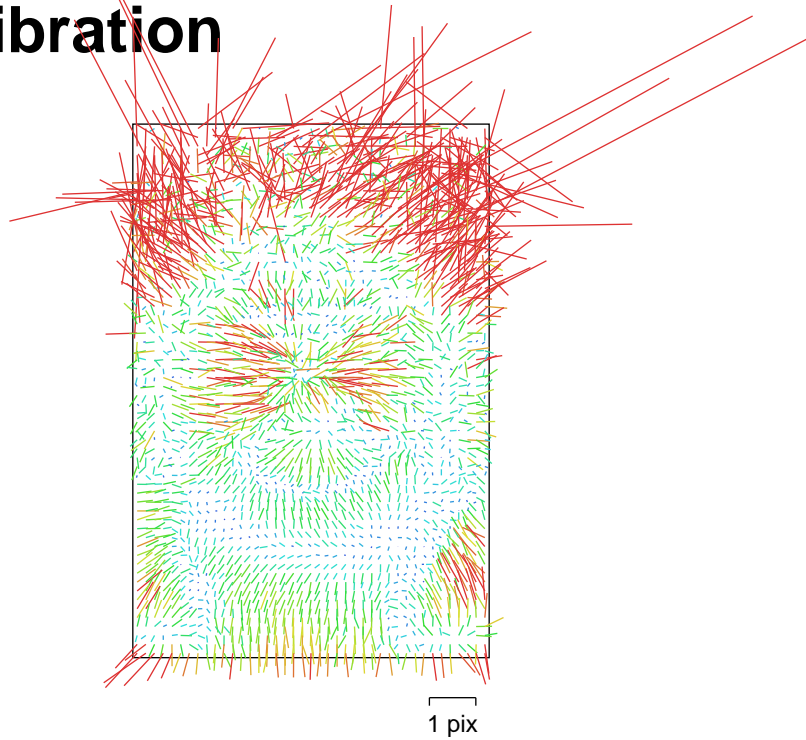


Fig. 5. Image residuals for Camera 3.

Camera 3

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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	2970.42	0.026	1.00	-0.02	0.02	-0.81	0.74	-0.66	-0.02	0.23
Cx	-9.85571	0.03		1.00	0.02	-0.00	-0.00	0.00	0.86	0.01
Cy	-21.7024	0.031			1.00	0.04	-0.00	0.00	0.02	0.70
K1	-0.035675	1.9e-05				1.00	-0.95	0.88	0.00	-0.16
K2	0.00875653	1.5e-05					1.00	-0.98	-0.01	0.07
K3	-0.000568592	3.3e-06						1.00	0.00	-0.03
P1	0.000649006	2.8e-06							1.00	0.01
P2	-3.63181e-05	3.3e-06								1.00

Table 5. Calibration coefficients and correlation matrix.

Camera Calibration

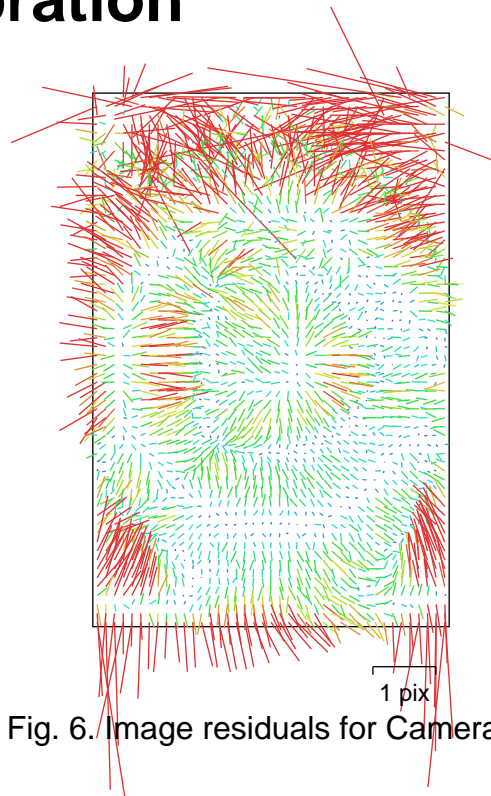


Fig. 6. Image residuals for Camera 4.

Camera 4

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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	2968.6	0.018	1.00	-0.04	-0.03	-0.75	0.70	-0.63	-0.03	0.05
Cx	-8.5391	0.023		1.00	-0.06	0.05	-0.05	0.05	0.86	-0.05
Cy	-6.48025	0.031			1.00	-0.00	-0.01	0.00	-0.06	0.88
K1	-0.0326976	1.4e-05				1.00	-0.96	0.90	0.02	-0.03
K2	0.00710227	1.2e-05					1.00	-0.98	-0.03	-0.01
K3	-0.000253273	2.9e-06						1.00	0.04	0.00
P1	0.000780483	2.3e-06							1.00	-0.04
P2	-0.000120406	3e-06								1.00

Table 6. Calibration coefficients and correlation matrix.

Camera Calibration

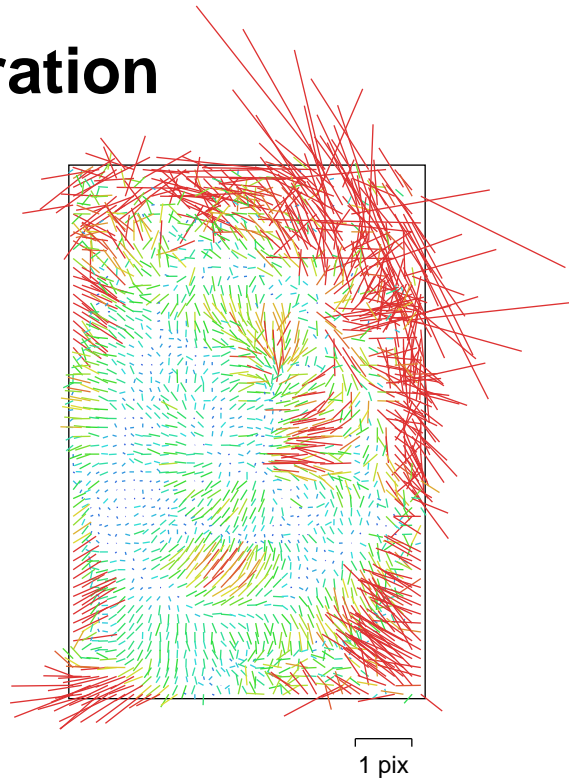


Fig. 7. Image residuals for Camera 5.

Camera 5

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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	2956.76	0.025	1.00	-0.11	0.00	-0.83	0.75	-0.66	-0.10	0.16
Cx	29.7498	0.026		1.00	0.18	0.01	-0.02	0.02	0.75	0.12
Cy	51.7956	0.033			1.00	-0.00	-0.00	0.01	0.15	0.82
K1	-0.0343886	1.9e-05				1.00	-0.96	0.90	0.08	-0.09
K2	0.00788946	1.6e-05					1.00	-0.98	-0.06	0.03
K3	-0.000431389	3.9e-06						1.00	0.05	-0.01
P1	-0.000775149	2.5e-06							1.00	0.07
P2	0.000404979	3.4e-06								1.00

Table 7. Calibration coefficients and correlation matrix.

Camera Calibration

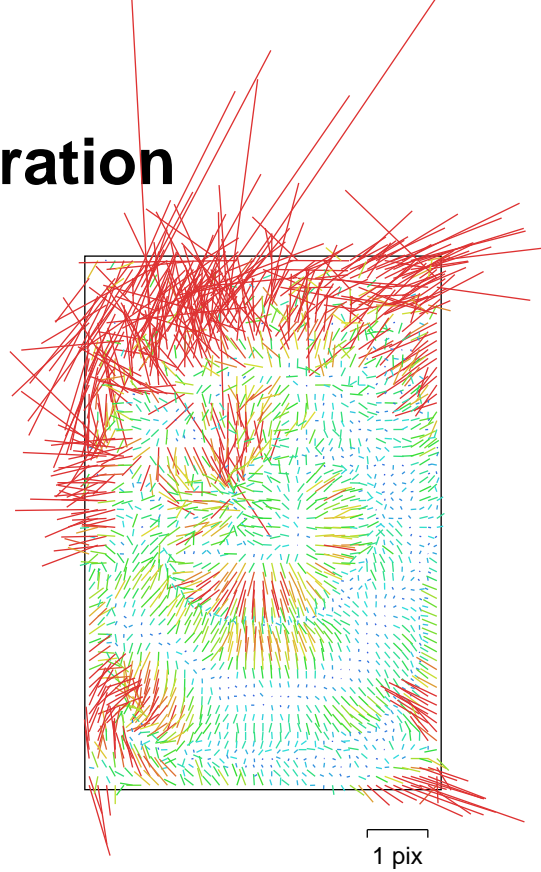


Fig. 8. Image residuals for Camera 6.

Camera 6

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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	2960.06	0.023	1.00	0.10	-0.01	-0.83	0.74	-0.66	0.09	0.19
Cx	-24.0571	0.026		1.00	-0.11	-0.00	0.01	-0.02	0.79	-0.08
Cy	-18.2134	0.029			1.00	-0.02	0.01	0.00	-0.12	0.77
K1	-0.0356347	1.6e-05				1.00	-0.96	0.90	-0.04	-0.15
K2	0.00892083	1.3e-05					1.00	-0.98	0.02	0.06
K3	-0.000617897	2.9e-06						1.00	-0.03	-0.03
P1	0.000255556	2.5e-06							1.00	-0.06
P2	0.000327475	3e-06								1.00

Table 8. Calibration coefficients and correlation matrix.

Camera Calibration

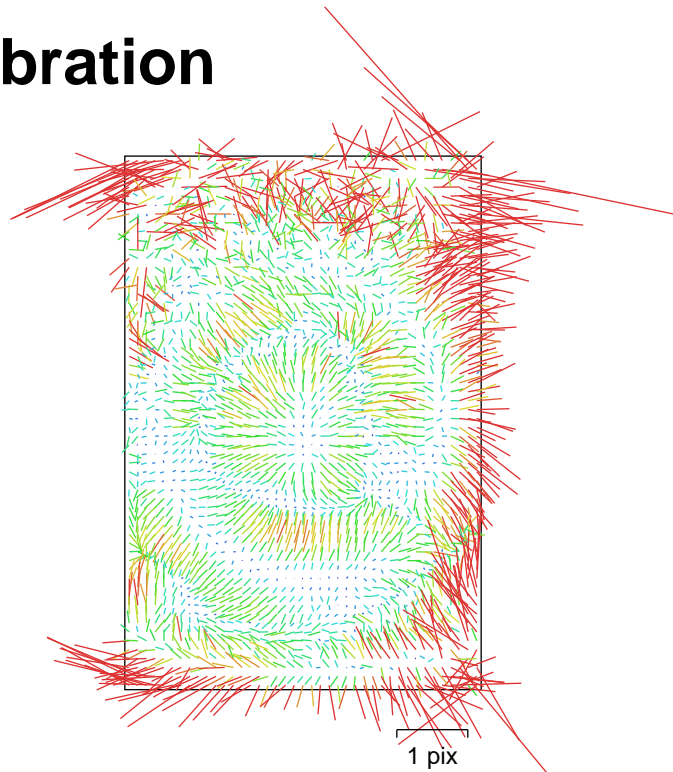


Fig. 9. Image residuals for Camera 7.

Camera 7

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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	2961.5	0.017	1.00	0.01	-0.08	-0.70	0.65	-0.57	-0.01	0.01
Cx	18.1661	0.022		1.00	0.03	-0.04	0.02	-0.02	0.84	0.02
Cy	19.3618	0.029			1.00	-0.01	-0.02	0.04	0.01	0.88
K1	-0.031512	1.6e-05				1.00	-0.96	0.89	0.01	-0.06
K2	0.00517908	1.6e-05					1.00	-0.98	-0.00	-0.00
K3	0.000376504	4.5e-06						1.00	0.00	0.03
P1	-0.000364361	2.1e-06							1.00	-0.02
P2	0.000288929	2.7e-06								1.00

Table 9. Calibration coefficients and correlation matrix.

Camera Calibration

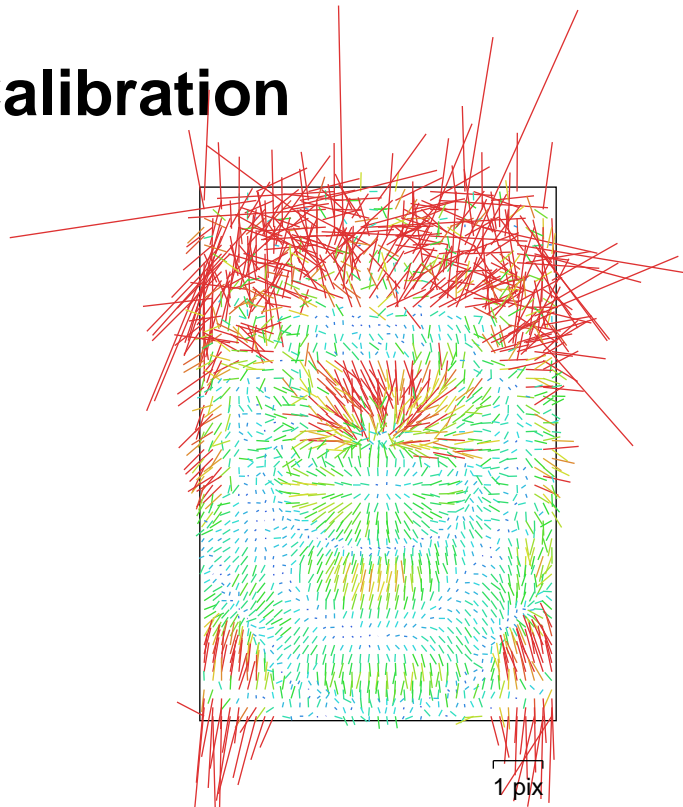


Fig. 10. Image residuals for Camera 8.

Camera 8

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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	2958.07	0.021	1.00	0.03	-0.02	-0.76	0.69	-0.62	0.01	0.23
Cx	27.1757	0.027		1.00	0.04	-0.00	0.00	-0.00	0.87	0.04
Cy	20.5447	0.028			1.00	0.01	0.01	-0.02	0.04	0.72
K1	-0.0343444	1.7e-05				1.00	-0.95	0.88	0.01	-0.21
K2	0.00770112	1.3e-05					1.00	-0.98	-0.01	0.11
K3	-0.000266887	3.1e-06						1.00	0.00	-0.08
P1	-0.00068442	2.6e-06							1.00	0.03
P2	2.27509e-05	2.8e-06								1.00

Table 10. Calibration coefficients and correlation matrix.

Camera Calibration

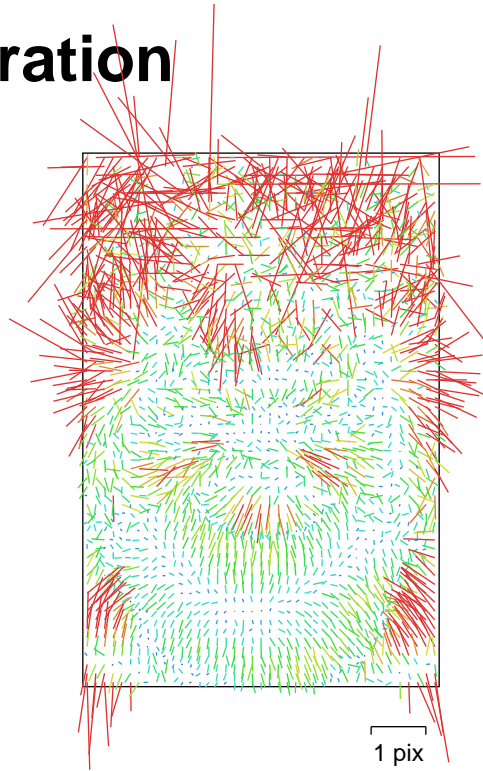


Fig. 11. Image residuals for Camera 9.

Camera 9

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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	2951.97	0.029	1.00	-0.01	0.02	-0.85	0.77	-0.69	-0.01	0.30
Cx	-20.6515	0.027		1.00	0.01	0.01	-0.01	0.01	0.81	-0.01
Cy	-10.4287	0.032			1.00	0.02	0.02	-0.04	0.00	0.68
K1	-0.0381188	1.9e-05				1.00	-0.96	0.89	0.00	-0.22
K2	0.0107286	1.3e-05					1.00	-0.98	-0.00	0.13
K3	-0.000937815	2.7e-06						1.00	-0.00	-0.10
P1	0.000249086	2.6e-06							1.00	-0.01
P2	2.1755e-05	3.4e-06								1.00

Table 11. Calibration coefficients and correlation matrix.

Camera Calibration

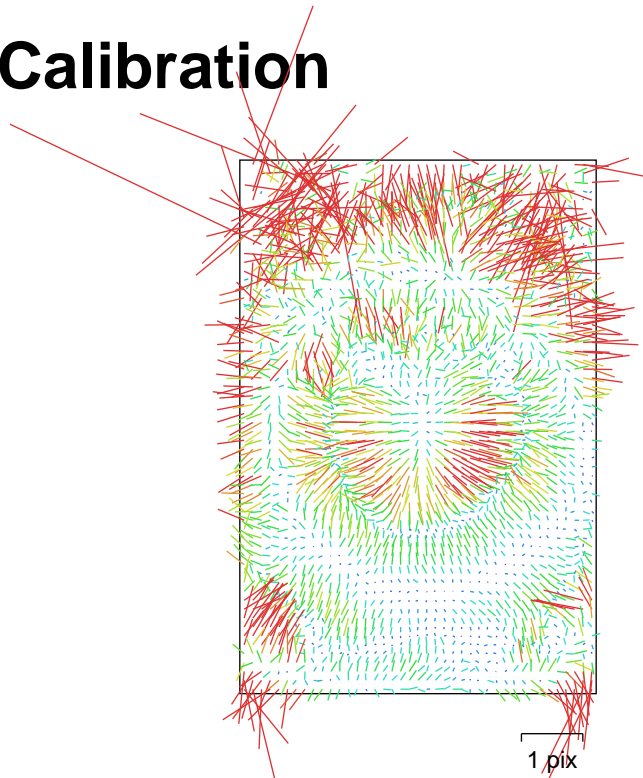


Fig. 12. Image residuals for Camera 10.

Camera 10

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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	2961.91	0.018	1.00	-0.03	0.01	-0.77	0.71	-0.63	-0.00	0.13
Cx	-14.5	0.02		1.00	-0.05	0.05	-0.04	0.02	0.79	-0.05
Cy	-15.7725	0.029			1.00	-0.00	0.00	0.02	-0.08	0.85
K1	-0.0343043	1.4e-05				1.00	-0.96	0.90	0.02	-0.10
K2	0.00852203	1.1e-05					1.00	-0.98	-0.02	0.04
K3	-0.000461583	2.6e-06						1.00	0.01	-0.00
P1	-6.87527e-05	1.7e-06							1.00	-0.06
P2	-0.000451332	2.6e-06								1.00

Table 12. Calibration coefficients and correlation matrix.

Camera Calibration

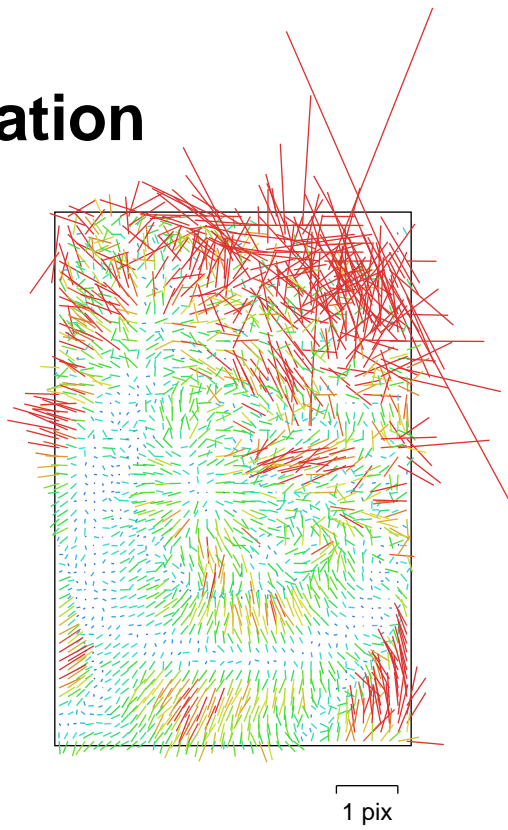


Fig. 13. Image residuals for Camera 11.

Camera 11

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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	2964.62	0.025	1.00	-0.09	-0.01	-0.86	0.78	-0.69	-0.10	0.20
Cx	21.1149	0.021		1.00	0.07	0.02	-0.02	0.01	0.72	-0.01
Cy	24.6384	0.028			1.00	0.01	0.01	-0.00	0.02	0.72
K1	-0.0371136	1.6e-05				1.00	-0.96	0.91	0.06	-0.13
K2	0.0105692	1.1e-05					1.00	-0.98	-0.04	0.06
K3	-0.000942485	2.3e-06						1.00	0.03	-0.03
P1	-0.000440714	1.9e-06							1.00	-0.10
P2	-0.000274369	2.6e-06								1.00

Table 13. Calibration coefficients and correlation matrix.

Camera Calibration

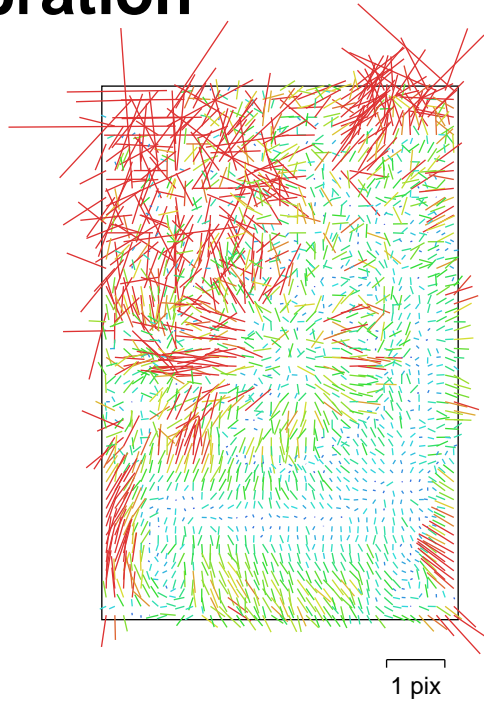


Fig. 14. Image residuals for Camera 12.

Camera 12

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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	2955.72	0.03	1.00	0.05	0.04	-0.86	0.78	-0.70	0.08	0.21
Cx	-23.0388	0.024		1.00	-0.04	0.00	-0.01	0.02	0.69	0.01
Cy	-15.0747	0.031			1.00	-0.03	0.04	-0.03	0.03	0.73
K1	-0.0375241	2e-05				1.00	-0.97	0.92	-0.06	-0.15
K2	0.0108732	1.3e-05					1.00	-0.98	0.03	0.08
K3	-0.000994146	2.7e-06						1.00	-0.02	-0.05
P1	0.000101327	2.3e-06							1.00	0.12
P2	-0.000244399	3.1e-06								1.00

Table 14. Calibration coefficients and correlation matrix.

Camera Calibration

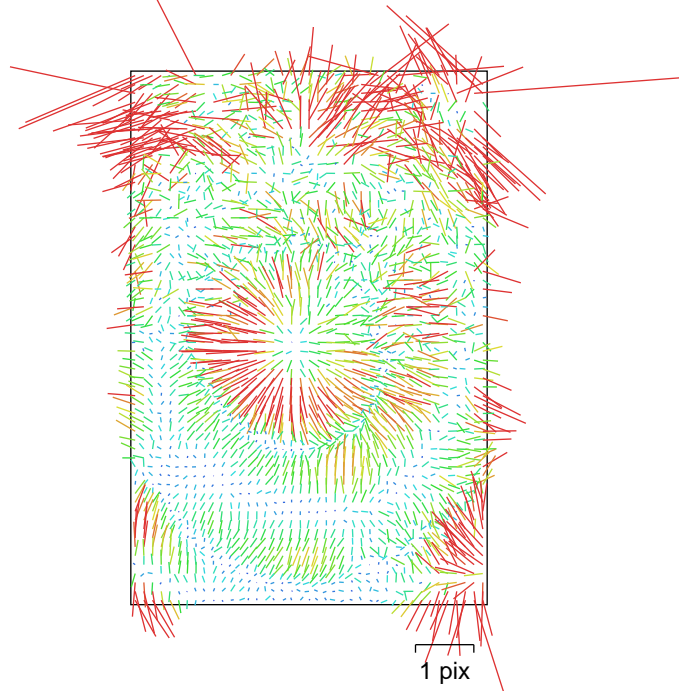


Fig. 15. Image residuals for Camera 13.

Camera 13

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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	2947.67	0.021	1.00	0.03	0.01	-0.76	0.70	-0.62	-0.04	0.15
Cx	12.8635	0.019		1.00	-0.02	-0.08	0.07	-0.08	0.74	-0.04
Cy	22.2722	0.03			1.00	-0.01	0.01	0.00	-0.05	0.83
K1	-0.0361465	1.4e-05				1.00	-0.96	0.90	-0.02	-0.12
K2	0.00939613	1.1e-05					1.00	-0.98	0.05	0.05
K3	-0.000626956	2.4e-06						1.00	-0.07	-0.02
P1	-0.000187279	1.6e-06							1.00	-0.13
P2	8.45965e-06	2.6e-06								1.00

Table 15. Calibration coefficients and correlation matrix.

Camera Calibration

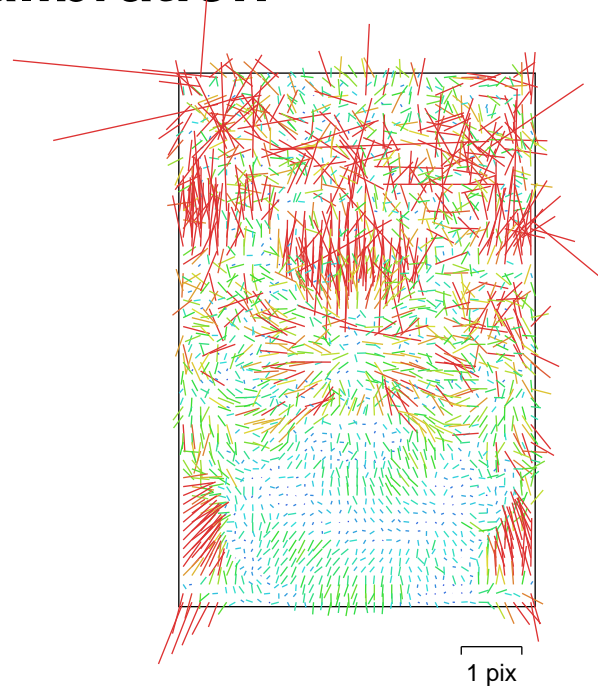


Fig. 16. Image residuals for Camera 14.

Camera 14

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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	2963.61	0.031	1.00	0.01	0.03	-0.85	0.78	-0.71	-0.01	0.26
Cx	17.6468	0.023		1.00	0.00	0.00	0.01	-0.02	0.75	-0.04
Cy	42.3093	0.031			1.00	-0.03	0.04	-0.04	-0.02	0.70
K1	-0.0377842	2.1e-05				1.00	-0.96	0.91	0.02	-0.19
K2	0.011	1.4e-05					1.00	-0.98	-0.00	0.10
K3	-0.000960755	2.9e-06						1.00	0.00	-0.06
P1	-0.000336939	2.3e-06							1.00	-0.06
P2	0.000179547	3.2e-06								1.00

Table 16. Calibration coefficients and correlation matrix.

Camera Calibration

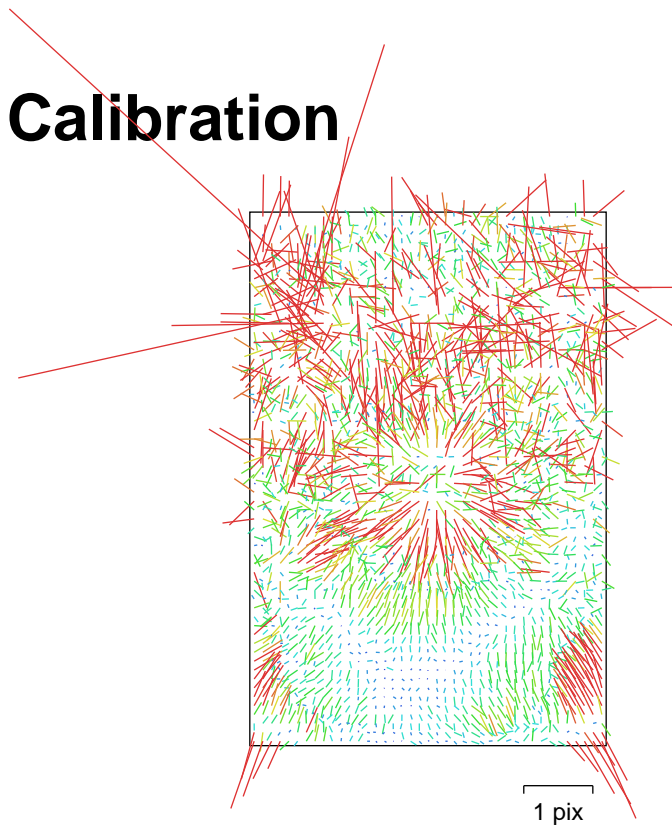


Fig. 17. Image residuals for Camera 15.

Camera 15

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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	2962.85	0.032	1.00	0.00	0.04	-0.83	0.78	-0.72	0.01	0.21
Cx	-8.62686	0.027		1.00	-0.01	0.02	-0.01	0.01	0.80	-0.03
Cy	-25.8973	0.032			1.00	-0.02	0.04	-0.04	-0.02	0.69
K1	-0.0371651	2e-05				1.00	-0.96	0.90	0.01	-0.18
K2	0.0109269	1.3e-05					1.00	-0.98	0.00	0.08
K3	-0.000982312	2.6e-06						1.00	-0.00	-0.04
P1	0.00055111	2.6e-06							1.00	-0.03
P2	-0.000293577	3.2e-06								1.00

Table 17. Calibration coefficients and correlation matrix.

Camera Calibration

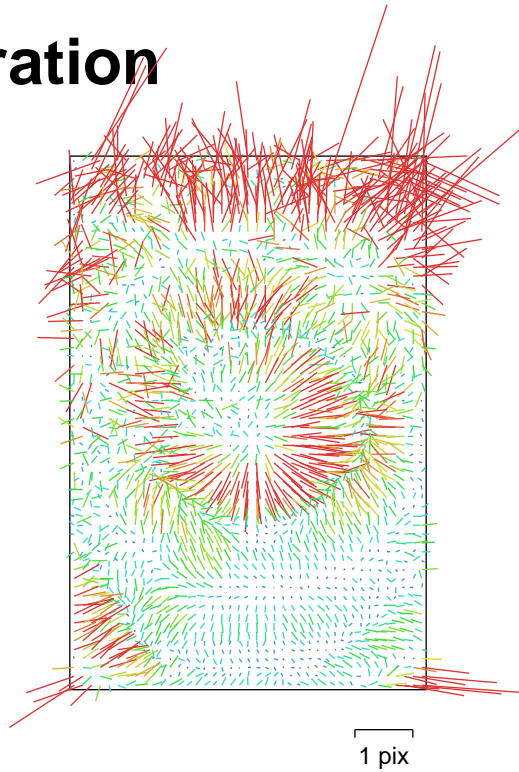


Fig. 18. Image residuals for Camera 16.

Camera 16

71 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	2951.37	0.026	1.00	-0.04	0.05	-0.80	0.74	-0.67	0.05	0.11
Cx	-9.14251	0.023		1.00	0.01	0.04	-0.04	0.03	0.76	0.03
Cy	-17.0912	0.032			1.00	0.02	0.00	0.02	0.01	0.77
K1	-0.0376549	1.7e-05				1.00	-0.96	0.90	-0.02	-0.06
K2	0.0102367	1.2e-05					1.00	-0.98	0.00	-0.02
K3	-0.000847016	2.5e-06						1.00	-0.00	0.07
P1	0.000294516	1.9e-06							1.00	0.07
P2	-0.000200507	2.9e-06								1.00

Table 18. Calibration coefficients and correlation matrix.

Camera Calibration

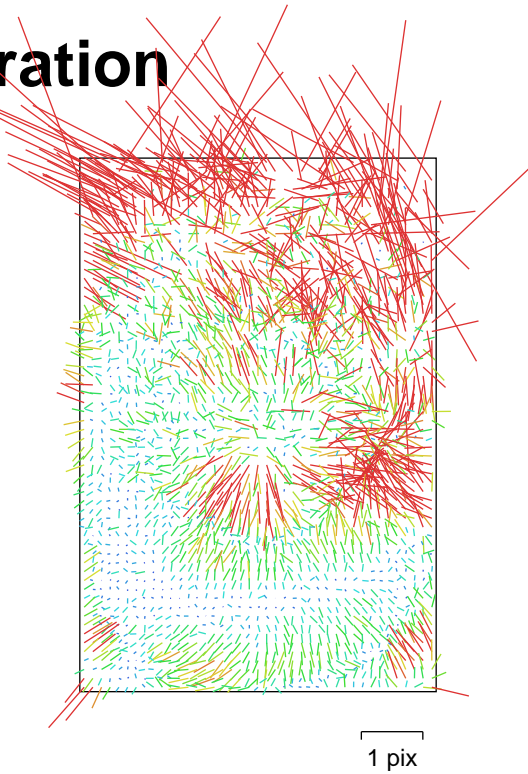


Fig. 19. Image residuals for Camera 17.

Camera 17

71 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	2961.12	0.032	1.00	-0.04	0.02	-0.86	0.80	-0.73	-0.07	0.15
Cx	19.8094	0.027		1.00	0.04	0.01	0.03	-0.04	0.77	-0.07
Cy	39.3187	0.031			1.00	0.02	0.03	-0.03	0.02	0.64
K1	-0.0380195	2e-05				1.00	-0.96	0.91	0.06	-0.08
K2	0.0114854	1.3e-05					1.00	-0.99	-0.02	0.02
K3	-0.00107919	2.6e-06						1.00	0.01	0.01
P1	-3.36069e-05	2.5e-06							1.00	-0.12
P2	9.29447e-05	2.8e-06								1.00

Table 19. Calibration coefficients and correlation matrix.

Camera Calibration

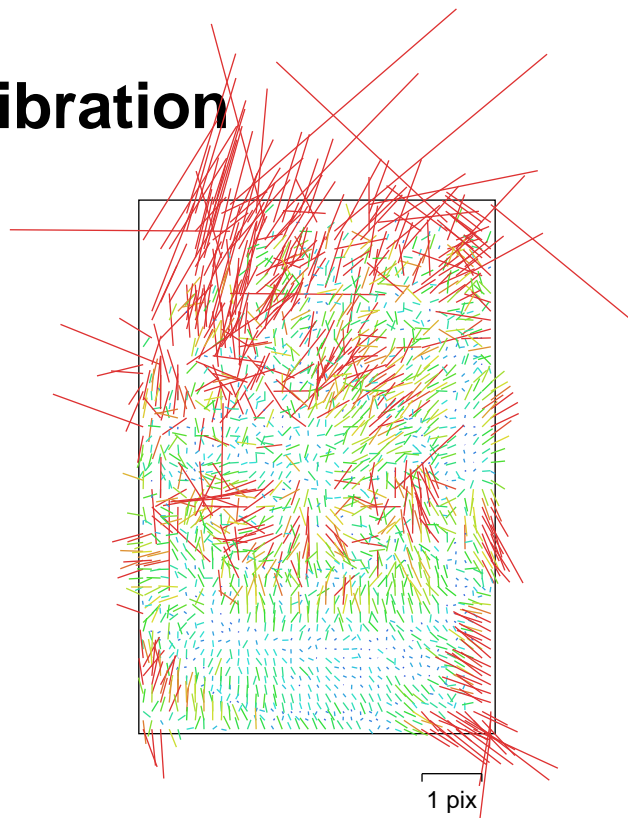


Fig. 20. Image residuals for Camera 18.

Camera 18

71 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	2958.27	0.045	1.00	0.01	0.09	-0.85	0.79	-0.71	0.04	0.04
Cx	-21.0704	0.044		1.00	-0.26	-0.02	-0.01	0.01	0.78	-0.19
Cy	-34.7752	0.044			1.00	0.05	0.03	-0.04	-0.22	0.67
K1	-0.0366332	3e-05				1.00	-0.96	0.90	-0.05	0.04
K2	0.0106933	2.1e-05					1.00	-0.98	0.01	-0.09
K3	-0.000951016	4.3e-06						1.00	-0.01	0.09
P1	0.000103098	4.3e-06							1.00	-0.17
P2	-0.000214939	4.5e-06								1.00

Table 20. Calibration coefficients and correlation matrix.

Camera Calibration

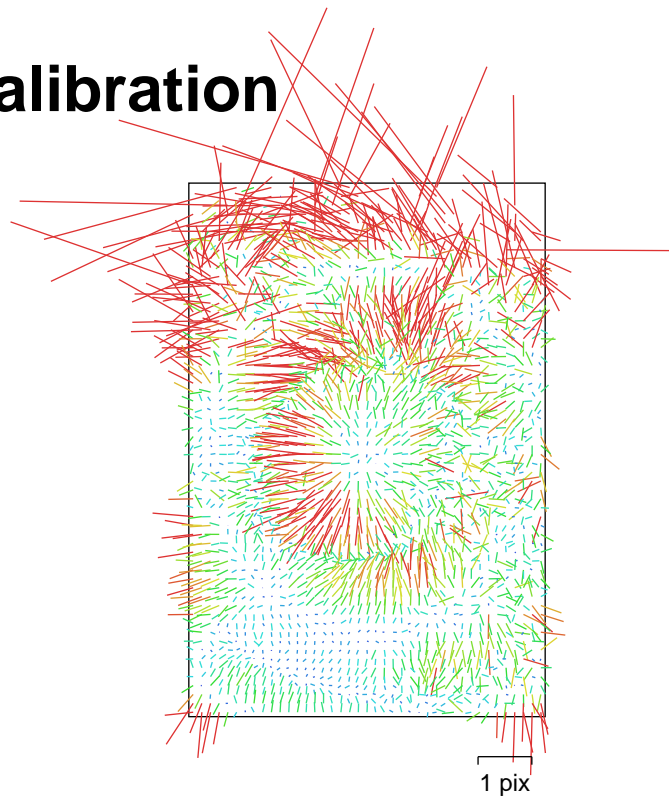


Fig. 21. Image residuals for Camera 19.

Camera 19

71 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	2958.93	0.03	1.00	0.05	0.11	-0.73	0.70	-0.64	-0.05	0.13
Cx	22.4965	0.027		1.00	-0.07	-0.06	0.06	-0.07	0.75	-0.11
Cy	31.314	0.037			1.00	0.07	0.01	-0.01	-0.06	0.69
K1	-0.0378223	1.9e-05				1.00	-0.95	0.89	0.04	-0.08
K2	0.0113522	1.3e-05					1.00	-0.98	0.01	-0.00
K3	-0.00101523	2.8e-06						1.00	-0.03	0.04
P1	-0.00028456	2.3e-06							1.00	-0.21
P2	5.23164e-05	3.4e-06								1.00

Table 21. Calibration coefficients and correlation matrix.

Camera Calibration

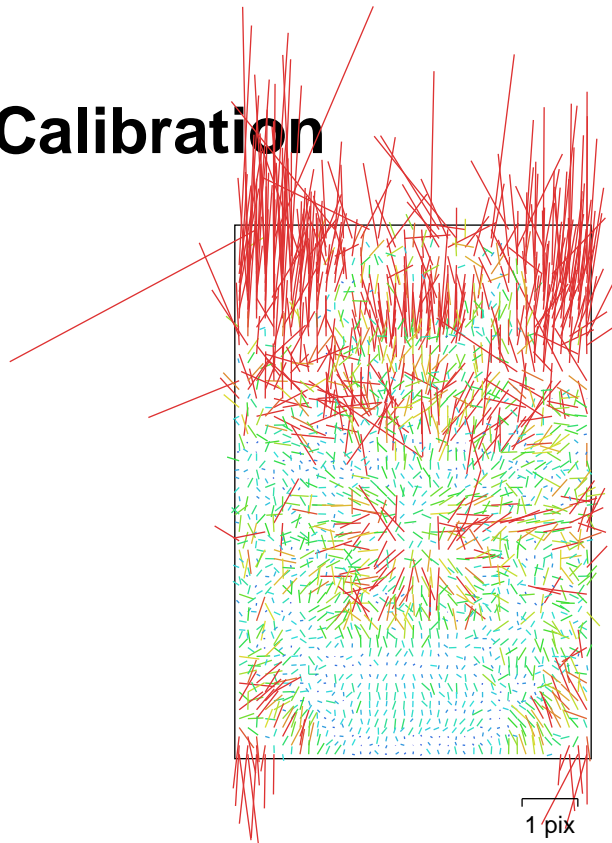


Fig. 22. Image residuals for Camera 20.

Camera 20

71 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	2956.16	0.053	1.00	0.02	0.13	-0.85	0.81	-0.74	0.00	0.08
Cx	21.3263	0.038		1.00	0.02	-0.01	0.01	-0.01	0.76	0.03
Cy	25.9993	0.047			1.00	0.02	0.05	-0.07	0.00	0.73
K1	-0.036641	3.6e-05				1.00	-0.96	0.90	-0.00	-0.03
K2	0.0101241	2.5e-05					1.00	-0.98	-0.01	0.00
K3	-0.000758116	5.3e-06						1.00	0.01	0.00
P1	0.000124225	4.3e-06							1.00	0.03
P2	0.000587523	4.9e-06								1.00

Table 22. Calibration coefficients and correlation matrix.

Camera Calibration

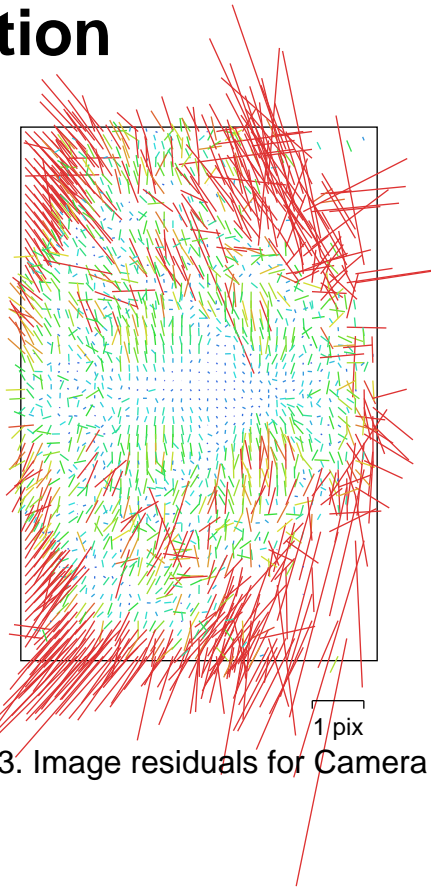


Fig. 23. Image residuals for Camera 21.

Camera 21

71 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	2970.45	0.44	1.00	-0.83	0.12	-0.20	0.15	-0.08	0.17	-0.02
Cx	-17.5128	0.2		1.00	-0.08	0.05	-0.08	0.06	-0.06	0.02
Cy	-24.1569	0.11			1.00	-0.05	0.07	-0.09	0.08	0.62
K1	-0.0377049	5.5e-05				1.00	-0.94	0.83	-0.16	-0.01
K2	0.0102985	4.7e-05					1.00	-0.97	0.19	0.01
K3	-0.00091156	1.2e-05						1.00	-0.15	-0.01
P1	0.000320006	1e-05							1.00	0.05
P2	6.72371e-06	7.5e-06								1.00

Table 23. Calibration coefficients and correlation matrix.

Scale Bars

Label	Distance (m)	Error (m)
003. 7-8	0.250099	3.93221e-05
006. 15-16	0.249939	-9.07278e-05
009. 23-24	0.250166	4.56087e-05
002a. 4-5	0.249996	-4.1092e-06
002b. 5-6	0.24986	-4.00406e-05
005a. 12-13	0.250062	8.15047e-05
005b. 13-14	0.249827	-6.27347e-05
008a. 20-21	0.250052	2.23158e-05
008b. 21-22	0.249889	8.67867e-06
Total		5.23132e-05

Table 24. Control scale bars.

Digital Elevation Model

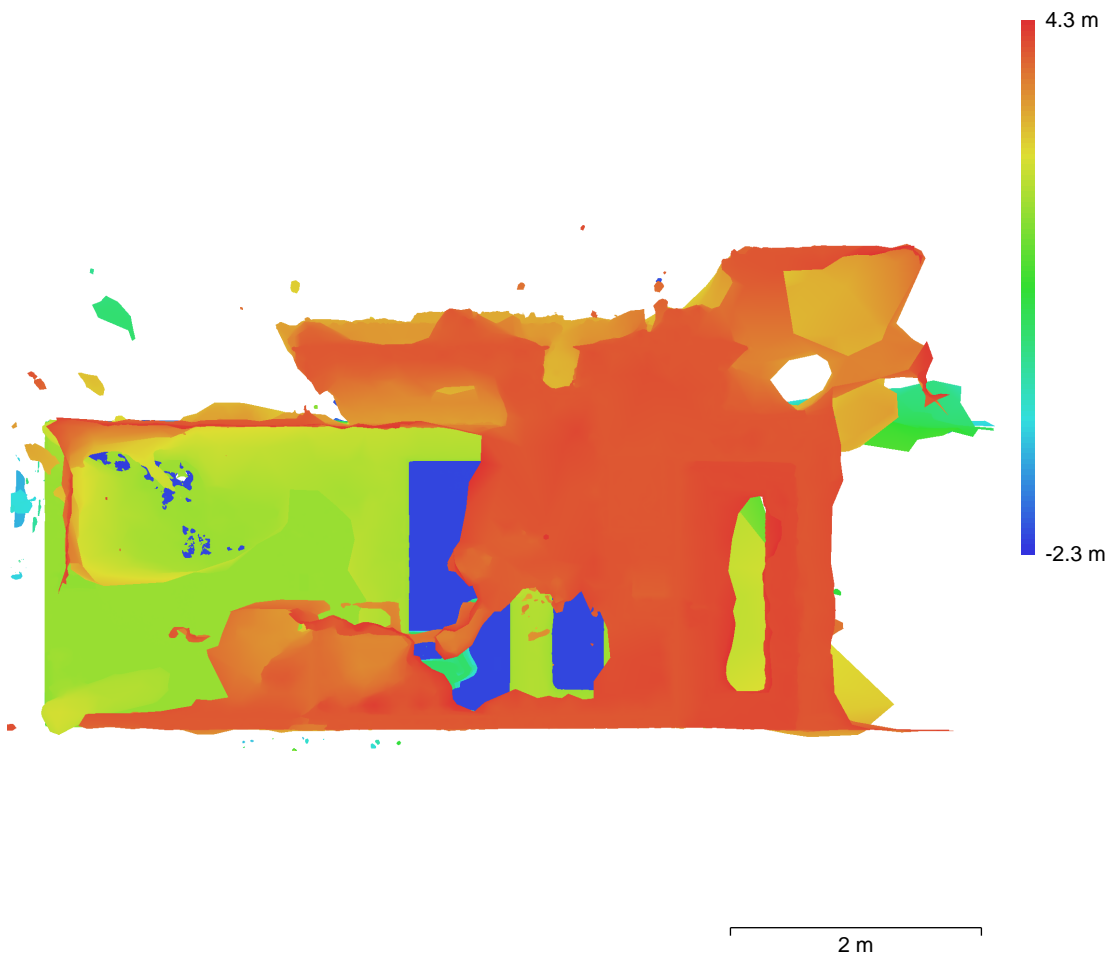


Fig. 24. Reconstructed digital elevation model.

Resolution: 4.09 mm/pix
Point density: 5.97 points/cm²

Processing Parameters

General

Cameras	1562
Aligned cameras	1562
Markers	15
Scale bars	9
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	1,290,323 of 2,204,344
RMS reprojection error	0.317617 (0.871831 pix)
Max reprojection error	1.45777 (21.8195 pix)
Mean key point size	2.53285 pix
Point colors	3 bands, uint8
Key points	7.40 GB
Average tie point multiplicity	3.28541

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	46 minutes 1 seconds
Matching memory usage	4.15 GB
Alignment time	7 minutes 3 seconds
Alignment memory usage	12.00 GB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	12 seconds
Date created	2023:08:25 04:36:08
Software version	2.0.2.16404
File size	174.21 MB

Depth Maps

Count	1444
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Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Max neighbors	16
Processing time	42 minutes 35 seconds
Memory usage	5.35 GB
Date created	2023:08:26 04:43:40
Software version	2.0.2.16404
File size	3.33 GB

Point Cloud

Points	78,362,716
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Point attributes

Color	3 bands, uint8
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Normal

Point classes

Created (never classified) 78,362,716

Depth maps generation parameters

Quality Medium
Filtering mode Mild
Max neighbors 16
Processing time 42 minutes 35 seconds
Memory usage 5.35 GB

Point cloud generation parameters

Processing time 1 hours 59 minutes
Memory usage 61.63 GB
Date created 2023:08:26 06:43:29
Software version 2.0.2.16404
File size 1.02 GB

Model

Faces 1,901,388
Vertices 951,675
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 42 minutes 35 seconds
Memory usage 5.35 GB

Reconstruction parameters

Surface type Arbitrary
Source data Depth maps
Interpolation Enabled
Strict volumetric masks No
Processing time 21 minutes 5 seconds
Memory usage 8.05 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 49 seconds
UV mapping memory usage 2.15 GB
Blending time 16 minutes 11 seconds
Blending memory usage 11.09 GB
Blending GPU memory usage 7.56 GB
Date created 2023:08:26 07:05:10
Software version 2.0.2.16404
File size 274.19 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