Agisoft Metashape

Processing Report
02 March 2026

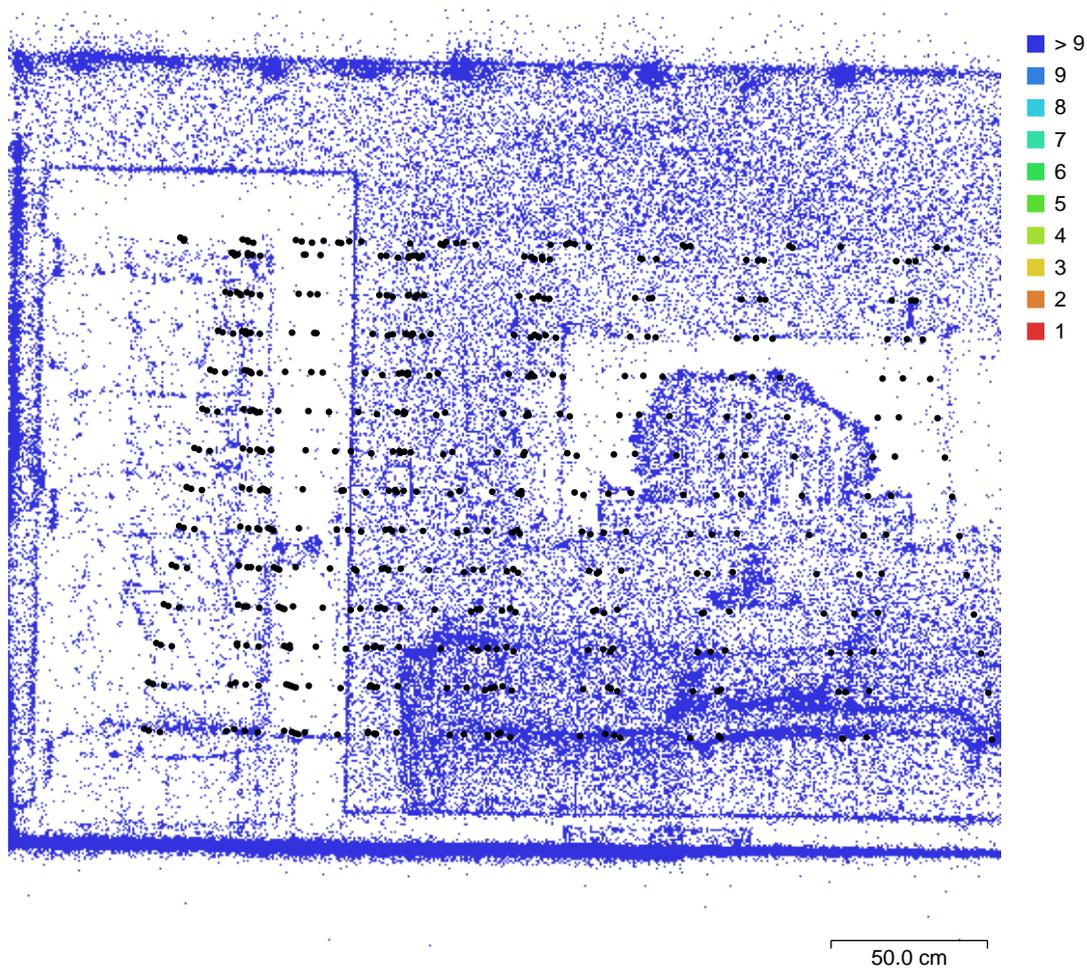# Survey Data

Fig. 1. Camera locations and image overlap.

Number of images:	504
Flying altitude:	48.3 cm
Ground resolution:	0.335 mm/pix
Coverage area:	2.31 m^2

Camera stations:	504
Tie points:	226,533
Projections:	642,475
Reprojection error:	0.701 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
40	8660 x 5784	6 mm	4.17 x 4.17 um	No
41	8660 x 5784	6 mm	4.17 x 4.17 um	No
42	8660 x 5784	6 mm	4.17 x 4.17 um	No
43	8660 x 5784	6 mm	4.17 x 4.17 um	No
44	8660 x 5784	6 mm	4.17 x 4.17 um	No

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
45	8660 x 5784	6 mm	4.17 x 4.17 um	No
46	8660 x 5784	6 mm	4.17 x 4.17 um	No
47	8660 x 5784	6 mm	4.17 x 4.17 um	No
48	8660 x 5784	6 mm	4.17 x 4.17 um	No
49	8660 x 5784	6 mm	4.17 x 4.17 um	No
50	8660 x 5784	6 mm	4.17 x 4.17 um	No
51	8660 x 5784	6 mm	4.17 x 4.17 um	No
52	8660 x 5784	6 mm	4.17 x 4.17 um	No
53	8660 x 5784	6 mm	4.17 x 4.17 um	No

Table 1. Cameras.

Camera Calibration
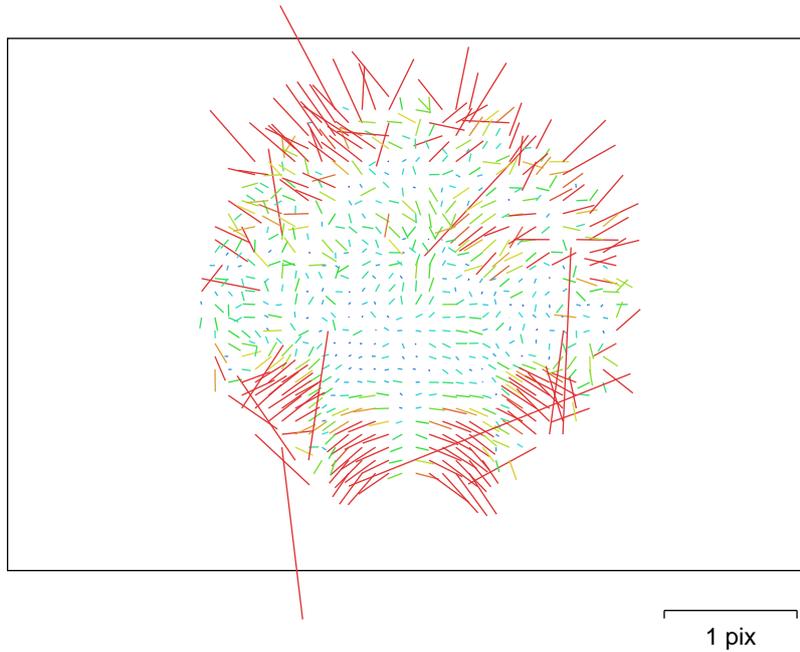
Fig. 2. Image residuals for 40.

1 pix

40

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1442.93**	0.028	1.00	0.01	-0.03	-0.78	0.67	-0.61	-0.02	0.10
Cx	**14.0858**	0.034		1.00	0.01	-0.01	0.01	-0.01	-0.62	0.01
Cy	**-21.6305**	0.05			1.00	-0.03	0.01	-0.01	0.02	-0.81
K1	**-0.00585627**	4.3e-05				1.00	-0.97	0.92	-0.03	0.05
K2	**0.00167665**	3.6e-05					1.00	-0.99	0.03	-0.05
K3	**-0.00155689**	8.8e-06						1.00	-0.03	0.05
P1	**0.000245543**	2e-06							1.00	-0.05
P2	**0.000330407**	3.7e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration
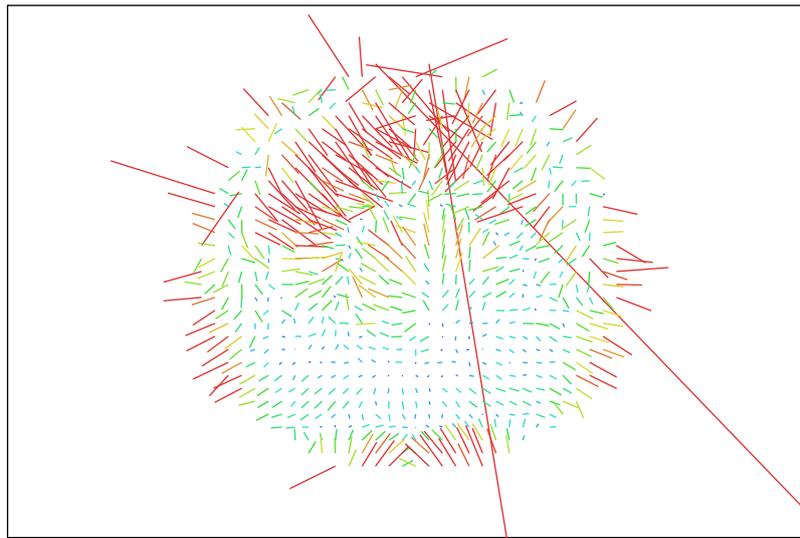
Fig. 3. Image residuals for 41.

41

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1442.18**	0.026	1.00	0.04	0.07	-0.80	0.69	-0.63	-0.05	0.09
Cx	**6.38063**	0.03		1.00	0.02	-0.06	0.05	-0.04	-0.70	-0.02
Cy	**-37.8742**	0.049			1.00	-0.02	0.00	-0.00	0.02	-0.86
K1	**-0.00449752**	3.5e-05				1.00	-0.97	0.92	0.01	-0.03
K2	**0.00081129**	2.6e-05					1.00	-0.99	0.00	0.03
K3	**-0.0013414**	6e-06						1.00	-0.01	-0.03
P1	**0.000201835**	1.7e-06							1.00	-0.05
P2	**0.000535611**	3.2e-06								1.00

Table 3. Calibration coefficients and correlation matrix.

Camera Calibration
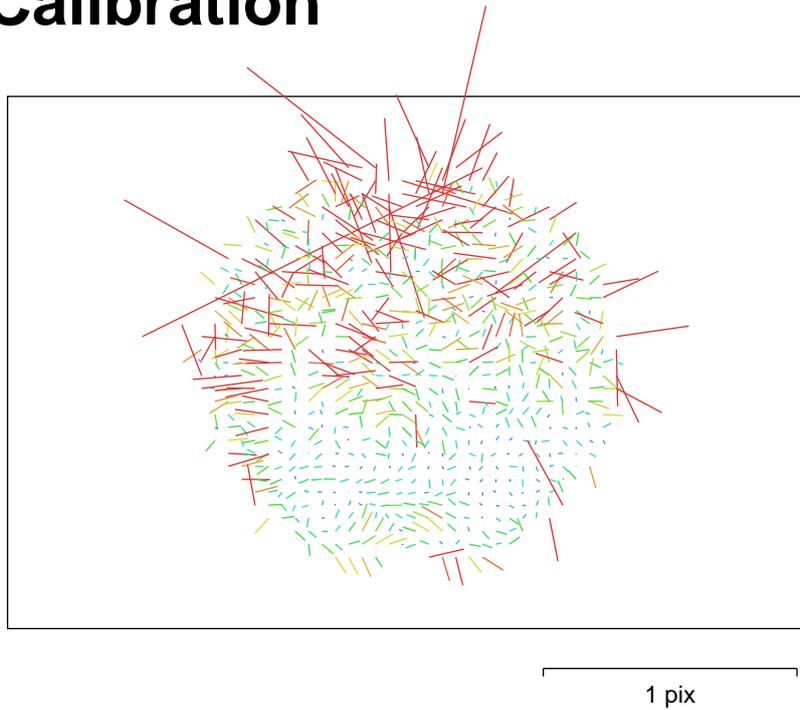
Fig. 4. Image residuals for 42.

42

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1436.32**	0.028	1.00	0.04	0.08	-0.83	0.72	-0.66	-0.05	0.06
Cx	**3.18666**	0.027		1.00	0.02	-0.07	0.05	-0.04	-0.73	-0.02
Cy	**-10.2454**	0.049			1.00	-0.03	0.02	-0.02	0.01	-0.88
K1	**-0.00416872**	3.7e-05				1.00	-0.97	0.93	0.02	-0.03
K2	**0.000555305**	2.7e-05					1.00	-0.99	0.00	0.01
K3	**-0.00133702**	6.3e-06						1.00	-0.00	-0.02
P1	**-0.000165018**	1.7e-06							1.00	-0.04
P2	**-6.24746e-05**	3.2e-06								1.00

Table 4. Calibration coefficients and correlation matrix.

Camera Calibration
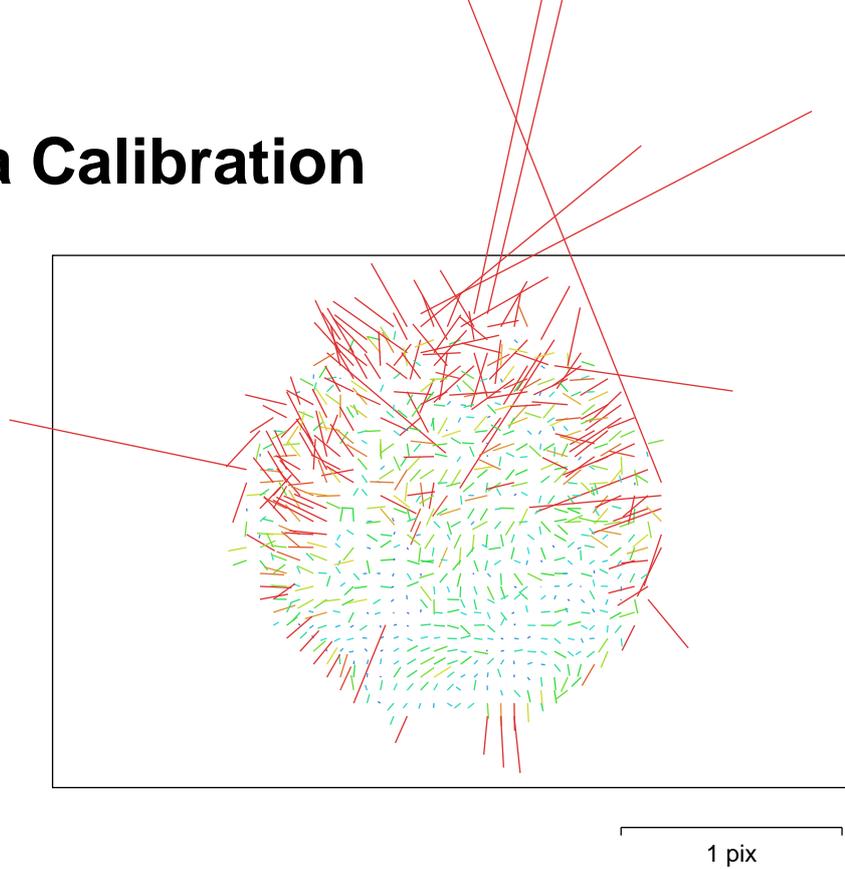
Fig. 5. Image residuals for 43.

43

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1449.64**	0.029	1.00	0.04	0.10	-0.84	0.74	-0.68	-0.07	0.02
Cx	**-5.69842**	0.027		1.00	0.02	-0.07	0.05	-0.04	-0.74	-0.02
Cy	**-53.4244**	0.051			1.00	-0.04	0.03	-0.03	0.00	-0.89
K1	**-0.00440654**	3.9e-05				1.00	-0.97	0.93	0.04	-0.01
K2	**0.000504995**	2.8e-05					1.00	-0.99	-0.02	-0.01
K3	**-0.00132565**	6.5e-06						1.00	0.02	0.01
P1	**0.000225237**	1.7e-06							1.00	-0.03
P2	**-0.00028019**	3.2e-06								1.00

Table 5. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
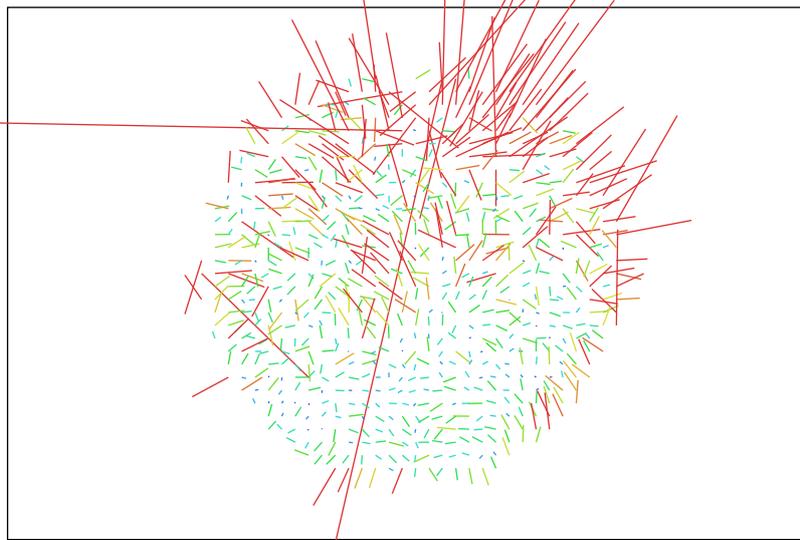
Fig. 6. Image residuals for 44.

44

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1444.1**	0.032	1.00	0.04	0.11	-0.86	0.76	-0.70	-0.07	-0.03
Cx	**28.1447**	0.027		1.00	0.02	-0.06	0.04	-0.03	-0.74	-0.01
Cy	**8.82069**	0.052			1.00	-0.04	0.03	-0.03	0.01	-0.89
K1	**-0.00406256**	4.4e-05				1.00	-0.98	0.94	0.03	0.03
K2	**0.000328739**	3.2e-05					1.00	-0.99	-0.00	-0.04
K3	**-0.00126166**	7.2e-06						1.00	-0.01	0.03
P1	**0.000188556**	1.8e-06							1.00	-0.04
P2	**0.000475185**	3.3e-06								1.00

Table 6. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
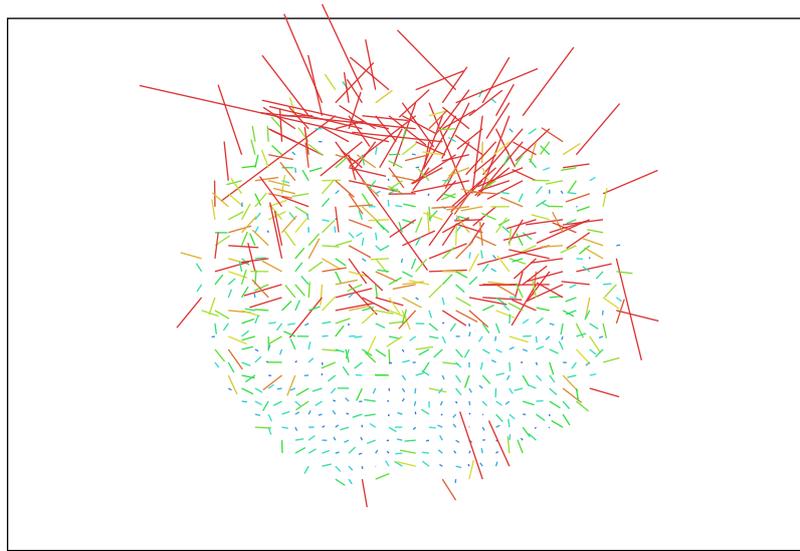
Fig. 7. Image residuals for 45.

45

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	1449.65	0.032	1.00	0.03	0.11	-0.86	0.76	-0.70	-0.06	-0.05
Cx	1.95992	0.025		1.00	0.01	-0.05	0.04	-0.03	-0.74	-0.00
Cy	-32.963	0.052			1.00	-0.03	0.02	-0.01	0.01	-0.90
K1	-0.0039487	4.3e-05				1.00	-0.98	0.93	0.03	0.02
K2	0.000130691	3.2e-05					1.00	-0.99	-0.01	-0.03
K3	-0.00123832	7.2e-06						1.00	0.00	0.03
P1	-0.000153991	1.8e-06							1.00	-0.03
P2	-0.000152736	3.2e-06								1.00

Table 7. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
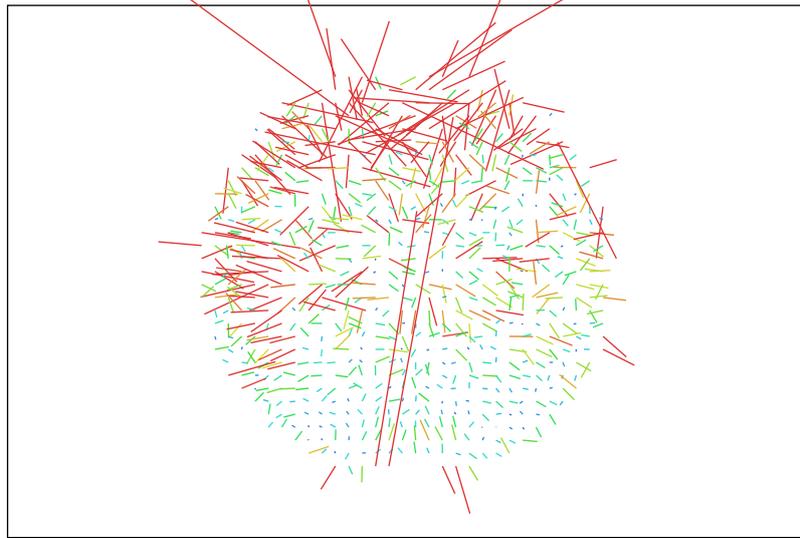
Fig. 8. Image residuals for 46.

46

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1437.76**	0.03	1.00	0.03	0.12	-0.85	0.75	-0.68	-0.07	-0.09
Cx	**-9.80755**	0.024		1.00	0.00	-0.06	0.04	-0.03	-0.74	0.01
Cy	**-14.0565**	0.051			1.00	-0.02	0.01	-0.01	0.01	-0.91
K1	**-0.00434295**	4.2e-05				1.00	-0.97	0.93	0.04	0.04
K2	**0.000256566**	3.1e-05					1.00	-0.99	-0.02	-0.05
K3	**-0.00125778**	7e-06						1.00	0.02	0.04
P1	**-0.000203465**	1.8e-06							1.00	-0.04
P2	**-1.25288e-05**	3.2e-06								1.00

Table 8. Calibration coefficients and correlation matrix.

Camera Calibration
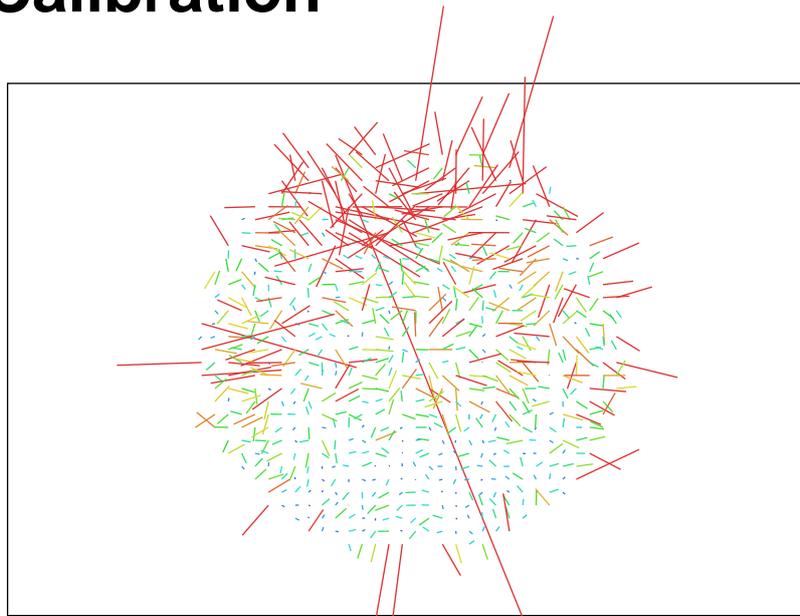
Fig. 9. Image residuals for 47.

47

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	1449.65	0.03	1.00	0.02	0.13	-0.84	0.74	-0.67	-0.06	-0.11
Cx	16.8805	0.024		1.00	0.00	-0.05	0.04	-0.03	-0.74	0.01
Cy	-37.6979	0.052			1.00	-0.03	0.02	-0.02	0.01	-0.91
K1	-0.00316024	4.2e-05				1.00	-0.97	0.93	0.03	0.05
K2	-0.000337521	3.1e-05					1.00	-0.99	-0.01	-0.05
K3	-0.00115373	7.1e-06						1.00	0.01	0.05
P1	-0.000196045	1.8e-06							1.00	-0.03
P2	5.4461e-05	3.2e-06								1.00

Table 9. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
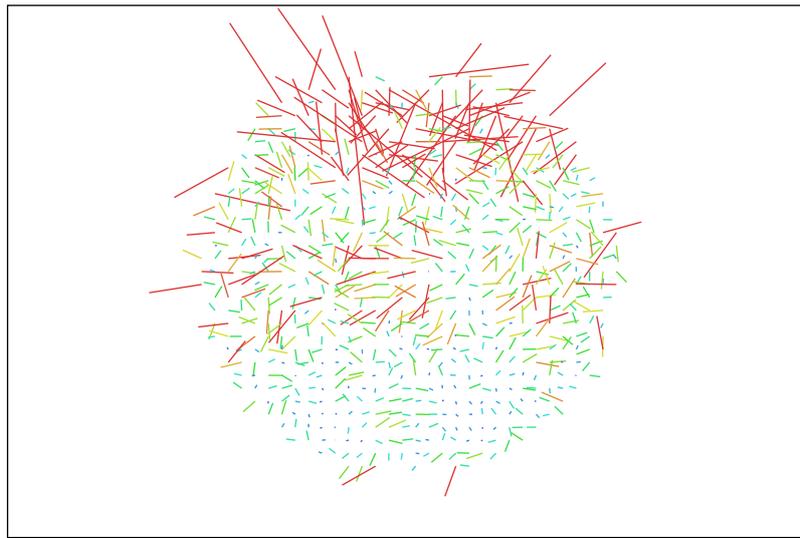
Fig. 10. Image residuals for 48.

48

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1437.86**	0.032	1.00	0.03	0.14	-0.84	0.74	-0.67	-0.07	-0.14
Cx	**10.1305**	0.024		1.00	-0.01	-0.06	0.05	-0.04	-0.75	0.01
Cy	**-34.1916**	0.052			1.00	-0.05	0.04	-0.04	0.01	-0.91
K1	**-0.00378066**	4.5e-05				1.00	-0.97	0.93	0.04	0.07
K2	**0.000199165**	3.4e-05					1.00	-0.99	-0.02	-0.07
K3	**-0.00124292**	7.7e-06						1.00	0.01	0.07
P1	**0.000340248**	1.9e-06							1.00	-0.01
P2	**-0.000248674**	3.3e-06								1.00

Table 10. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
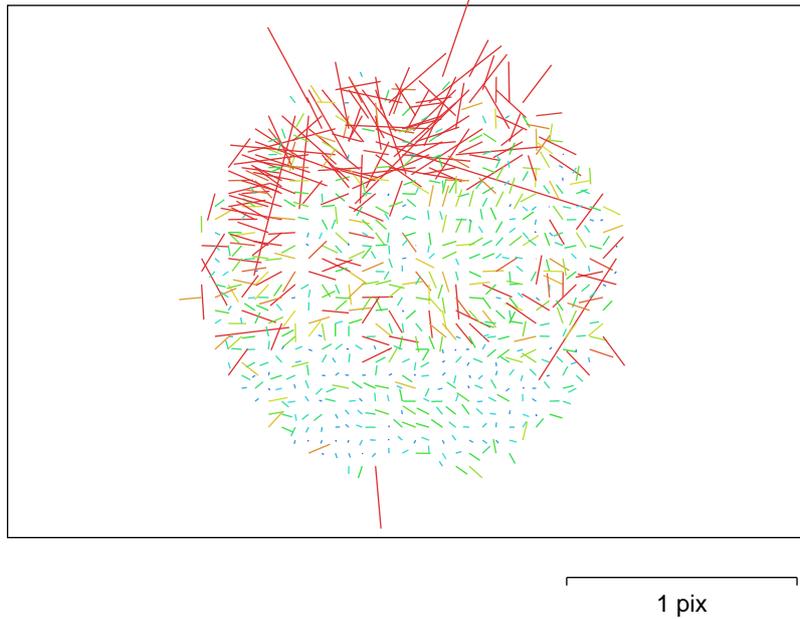
Fig. 11. Image residuals for 49.

49

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1435.86**	0.03	1.00	0.03	0.15	-0.81	0.70	-0.63	-0.08	-0.17
Cx	**-10.6911**	0.024		1.00	-0.02	-0.05	0.04	-0.02	-0.75	0.02
Cy	**-17.7984**	0.053			1.00	-0.04	0.03	-0.03	0.02	-0.91
K1	**-0.00408874**	4.3e-05				1.00	-0.97	0.93	0.02	0.07
K2	**0.000309102**	3.2e-05					1.00	-0.99	0.00	-0.07
K3	**-0.00126811**	7.5e-06						1.00	-0.01	0.06
P1	**-0.000149311**	1.9e-06							1.00	-0.02
P2	**5.11461e-06**	3.3e-06								1.00

Table 11. Calibration coefficients and correlation matrix.

Camera Calibration
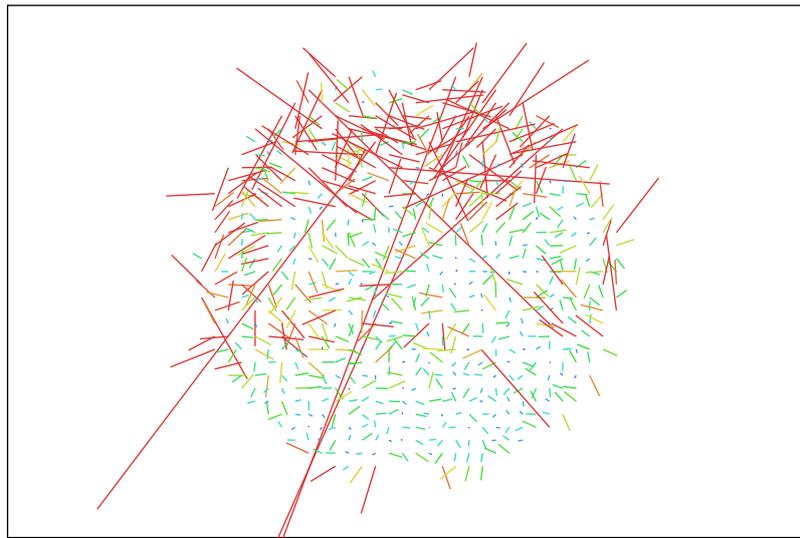
Fig. 12. Image residuals for 50.

50

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1444.22**	0.033	1.00	0.04	0.13	-0.80	0.69	-0.61	-0.08	-0.16
Cx	**11.6886**	0.026		1.00	-0.01	-0.06	0.05	-0.03	-0.75	0.03
Cy	**-21.2787**	0.054			1.00	-0.03	0.02	-0.02	0.01	-0.90
K1	**-0.00501798**	4.7e-05				1.00	-0.97	0.93	0.04	0.05
K2	**0.000698201**	3.6e-05					1.00	-0.99	-0.01	-0.05
K3	**-0.00134866**	8.3e-06						1.00	0.01	0.05
P1	**0.000207178**	2e-06							1.00	-0.02
P2	**3.67548e-05**	3.4e-06								1.00

Table 12. Calibration coefficients and correlation matrix.

Camera Calibration
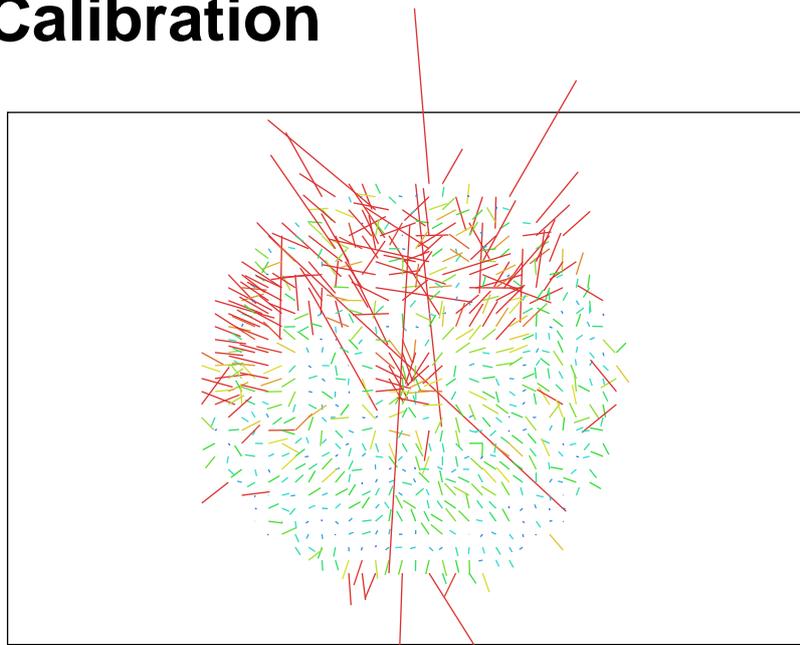
Fig. 13. Image residuals for 51.

51

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1440.93**	0.029	1.00	0.06	0.14	-0.78	0.65	-0.58	-0.12	-0.17
Cx	**1.27102**	0.024		1.00	-0.03	-0.07	0.05	-0.04	-0.73	0.04
Cy	**-1.51754**	0.054			1.00	-0.01	0.01	-0.01	0.01	-0.91
K1	**-0.00468716**	4.1e-05				1.00	-0.97	0.92	0.04	0.03
K2	**0.000851389**	3.2e-05					1.00	-0.99	-0.01	-0.03
K3	**-0.00140861**	7.6e-06						1.00	0.00	0.04
P1	**-0.000163903**	1.9e-06							1.00	-0.02
P2	**-0.000515651**	3.4e-06								1.00

Table 13. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
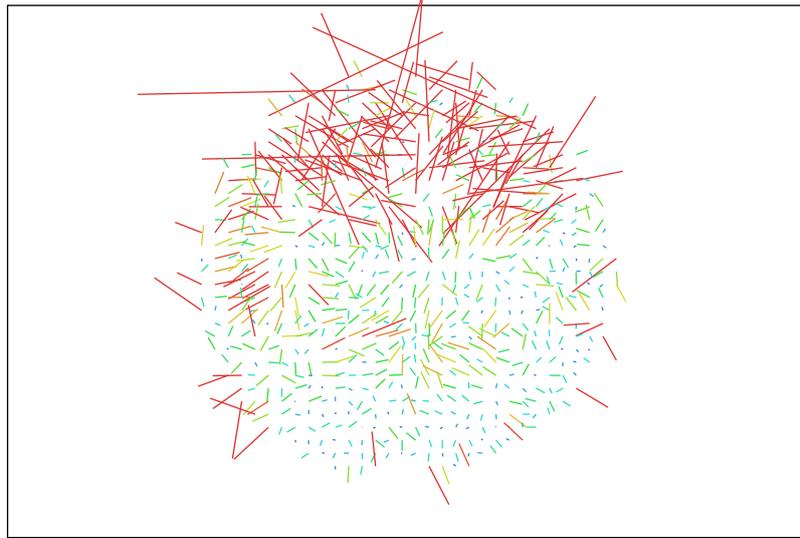
Fig. 14. Image residuals for 52.

52

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1441.57**	0.031	1.00	0.09	0.13	-0.78	0.66	-0.58	-0.13	-0.16
Cx	**-10.5247**	0.024		1.00	-0.03	-0.08	0.06	-0.05	-0.72	0.05
Cy	**-9.53134**	0.056			1.00	0.00	-0.00	-0.00	0.01	-0.89
K1	**-0.00394226**	4.3e-05				1.00	-0.97	0.92	0.05	0.00
K2	**0.000186511**	3.3e-05					1.00	-0.99	-0.02	-0.02
K3	**-0.00122969**	7.9e-06						1.00	0.02	0.02
P1	**-5.55151e-05**	2e-06							1.00	-0.02
P2	**-0.000461628**	3.5e-06								1.00

Table 14. Calibration coefficients and correlation matrix.

Camera Calibration
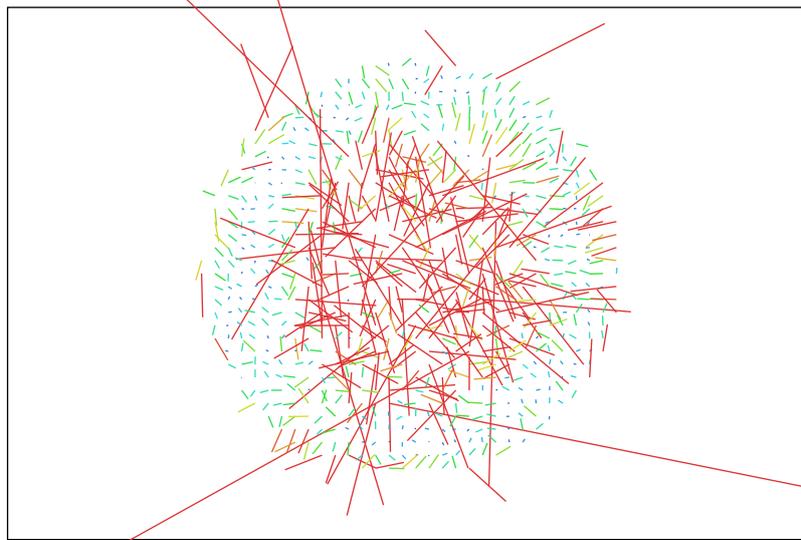
Fig. 15. Image residuals for 53.

53

36 images

Type	Resolution	Focal Length	Pixel Size
Fisheye	**8660 x 5784**	**6 mm**	**4.17 x 4.17 um**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**1430.22**	0.14	1.00	0.02	-0.05	-0.94	0.88	-0.83	0.04	0.01
Cx	**27.1621**	0.027		1.00	-0.03	-0.03	0.03	-0.03	-0.80	0.06
Cy	**-53.3992**	0.027			1.00	0.07	-0.07	0.08	0.03	-0.76
K1	**0.0015404**	0.00017				1.00	-0.98	0.95	-0.03	-0.07
K2	**-0.000949001**	0.0001					1.00	-0.99	0.02	0.10
K3	**-0.00128947**	2.1e-05						1.00	-0.01	-0.14
P1	**-0.000221639**	2.3e-06							1.00	-0.06
P2	**-0.000222109**	2.4e-06								1.00

Table 15. Calibration coefficients and correlation matrix.

Scale Bars

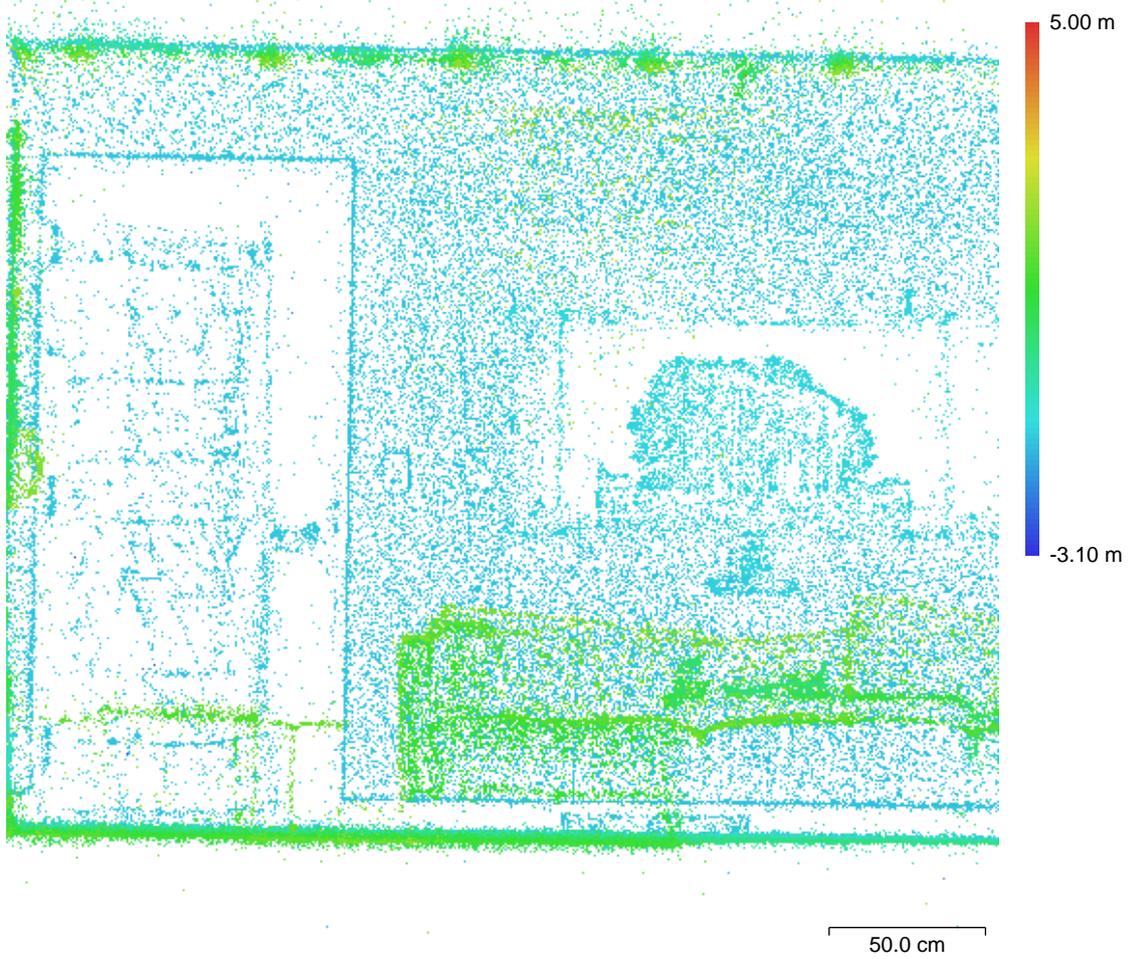| Label	Distance (m)	Error (m)
002a. 4-5	0.250223	0.000222728
002b. 5-6	0.249441	-0.000459021
005a. 12-13	0.249868	-0.000112335
005b. 13-14	0.249748	-0.000142102
008a. 20-21	0.250328	0.00029807
008b. 21-22	0.250073	0.000192661
Total		**0.000264287**

Table 16. Control scale bars.

Digital Elevation Model

Fig. 16. Reconstructed digital elevation model.

Resolution: unknown
Point density: unknown

Processing Parameters

General

Images	504
Aligned images	504
Markers	10
Scale bars	6
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	226,533 of 509,589
RMS reprojection error	0.213487 (0.700913 pix)
Max reprojection error	0.876604 (35.8372 pix)
Mean key point size	2.11756 pix
Point colors	3 bands, uint8
Key points	2.39 GB
Average tie point multiplicity	3.68776

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	3 minutes 27 seconds
Matching memory usage	6.43 GB
Alignment time	32 seconds
Alignment memory usage	1.38 GB

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Exclude corners	No
Optimization time	1 seconds
Date created	2026:02:27 17:57:12
Software version	2.2.2.21287
File size	2.43 GB

System

Software name	Agisoft Metashape Professional
Software version	2.2.2 build 21287
OS	Windows 64 bit
RAM	255.52 GB
CPU	AMD Ryzen Threadripper PRO 7975WX 32-Cores
GPU(s)	NVIDIA GeForce RTX 5090
	NVIDIA GeForce RTX 5090