Agisoft Metashape

Processing Report
24 February 2026

Survey Data

Fig. 1. Camera locations and image overlap.

Number of images:	840	Camera stations:	840
Flying altitude:	45.6 cm	Tie points:	319,533
Ground resolution:	0.629 mm/pix	Projections:	960,256
Coverage area:	19.2 m^2	Reprojection error:	0.368 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
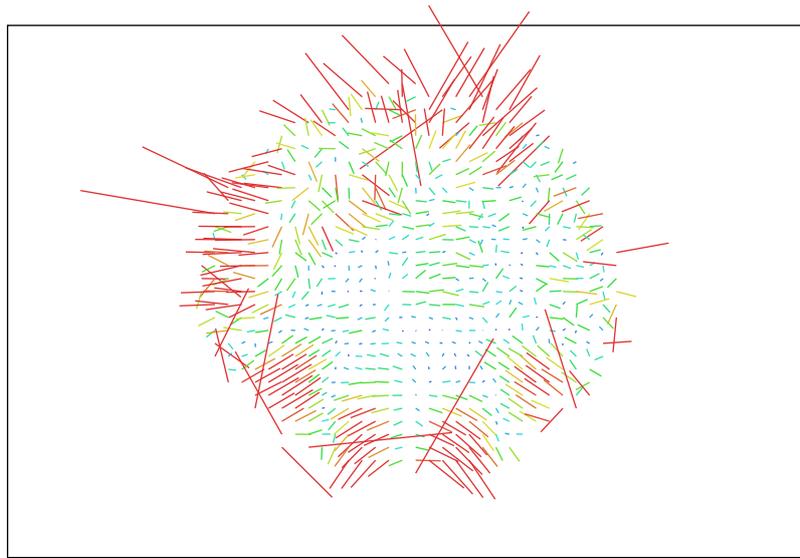
1 pix

Fig. 2. Image residuals for 40.

40

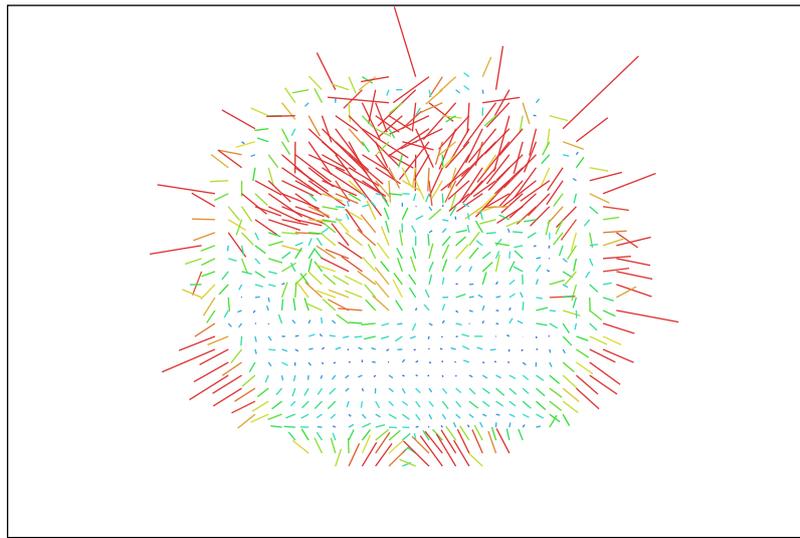60 images

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	**1443.16**	0.022	1.00	0.01	-0.01	-0.78	0.66	-0.60	0.02	-0.04
Cx	**14.0316**	0.032		1.00	-0.05	0.01	-0.01	0.00	-0.58	0.03
Cy	**-20.1557**	0.044			1.00	-0.05	0.02	-0.01	0.03	-0.72
K1	**-0.00590536**	3.7e-05				1.00	-0.97	0.92	0.01	0.13
K2	**0.0019178**	3.1e-05					1.00	-0.99	-0.02	-0.11
K3	**-0.00163062**	8e-06						1.00	0.02	0.11
P1	**0.000326724**	1.9e-06							1.00	-0.00
P2	**0.00037908**	3.1e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix

Fig. 3. Image residuals for 41.

41

60 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	**1442.8**	0.021	1.00	-0.01	0.06	-0.80	0.66	-0.59	0.03	0.02
Cx	**4.16788**	0.026		1.00	-0.03	0.02	-0.02	0.02	-0.66	0.04
Cy	**-36.6835**	0.041			1.00	-0.00	-0.01	0.01	0.03	-0.81
K1	**-0.00487425**	2.8e-05				1.00	-0.96	0.91	-0.02	0.01
K2	**0.00112101**	2e-05					1.00	-0.98	0.01	-0.01
K3	**-0.00141731**	4.6e-06						1.00	-0.01	-0.00
P1	**0.000274372**	1.6e-06							1.00	-0.03
P2	**0.000605273**	2.6e-06								1.00

Table 3. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
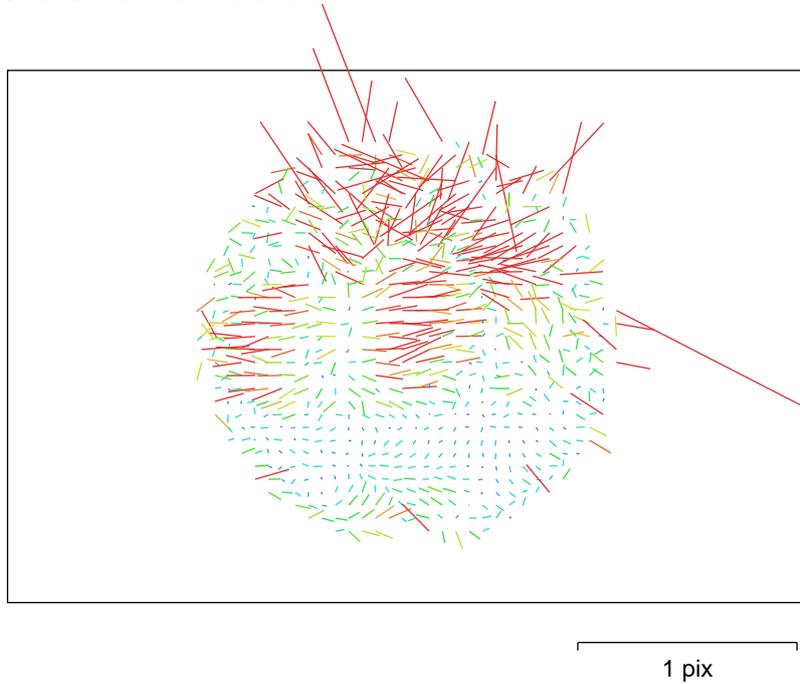
Fig. 4. Image residuals for 42.

42

60 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	**1436.99**	0.021	1.00	-0.01	0.07	-0.81	0.68	-0.61	0.03	0.02
Cx	**2.678**	0.023		1.00	-0.02	0.02	-0.02	0.01	-0.67	0.03
Cy	**-10.0645**	0.04			1.00	-0.01	0.00	-0.01	0.02	-0.83
K1	**-0.00438055**	2.8e-05				1.00	-0.96	0.91	-0.02	0.00
K2	**0.000736033**	2e-05					1.00	-0.98	0.01	-0.02
K3	**-0.00138682**	4.7e-06						1.00	-0.01	0.01
P1	**-0.000105976**	1.6e-06							1.00	-0.04
P2	**3.20892e-05**	2.5e-06								1.00

Table 4. Calibration coefficients and correlation matrix.

Camera Calibration
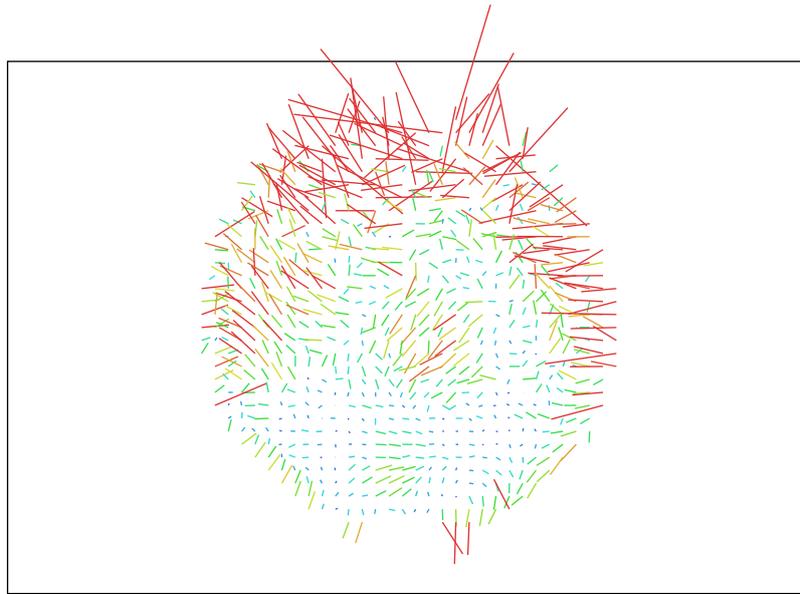
1 pix

Fig. 5. Image residuals for 43.

43

60 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	**1450.48**	0.022	1.00	-0.00	0.08	-0.82	0.69	-0.62	0.03	0.01
Cx	**-4.46429**	0.022		1.00	-0.00	0.02	-0.01	0.01	-0.68	0.03
Cy	**-54.8337**	0.04			1.00	-0.02	0.01	-0.02	0.02	-0.84
K1	**-0.00448768**	2.9e-05				1.00	-0.97	0.92	-0.02	-0.00
K2	**0.000560035**	2.1e-05					1.00	-0.99	0.02	-0.02
K3	**-0.00134904**	4.7e-06						1.00	-0.01	0.02
P1	**0.000275945**	1.6e-06							1.00	-0.03
P2	**-0.000173718**	2.5e-06								1.00

Table 5. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
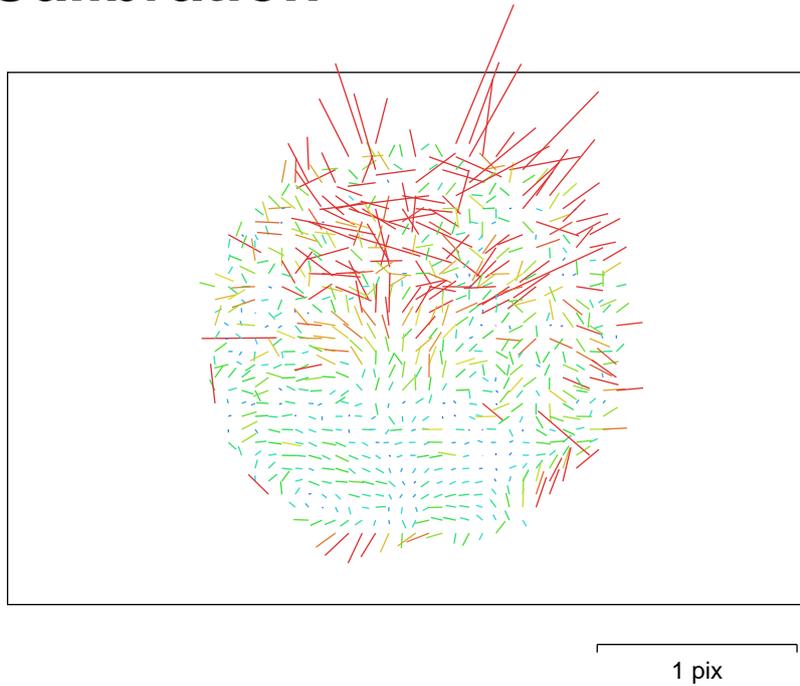
Fig. 6. Image residuals for 44.

44

60 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	**1444.42**	0.023	1.00	-0.00	0.10	-0.83	0.70	-0.63	0.04	-0.01
Cx	**30.7377**	0.021		1.00	-0.00	0.02	-0.01	0.01	-0.68	0.03
Cy	**6.59055**	0.04			1.00	-0.03	0.02	-0.02	0.02	-0.85
K1	**-0.00421009**	3e-05				1.00	-0.97	0.92	-0.03	0.00
K2	**0.000530083**	2.2e-05					1.00	-0.99	0.02	-0.03
K3	**-0.00131852**	4.9e-06						1.00	-0.02	0.03
P1	**0.000220996**	1.6e-06							1.00	-0.03
P2	**0.000532133**	2.5e-06								1.00

Table 6. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
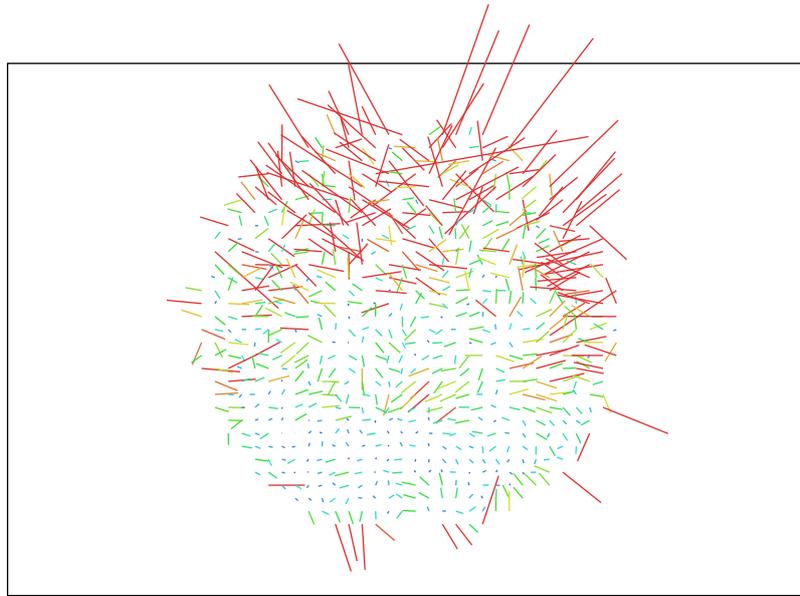
Fig. 7. Image residuals for 45.

45

60 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	**1450.34**	0.024	1.00	0.00	0.11	-0.83	0.71	-0.64	0.03	-0.01
Cx	**3.85065**	0.02		1.00	0.01	0.01	-0.01	0.00	-0.68	0.02
Cy	**-36.4383**	0.041			1.00	-0.03	0.02	-0.03	0.02	-0.85
K1	**-0.00396413**	3.1e-05				1.00	-0.97	0.92	-0.02	-0.00
K2	**0.000148819**	2.2e-05					1.00	-0.99	0.02	-0.03
K3	**-0.00125631**	5.1e-06						1.00	-0.02	0.03
P1	**-0.000128447**	1.5e-06							1.00	-0.03
P2	**-8.387e-05**	2.6e-06								1.00

Table 7. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
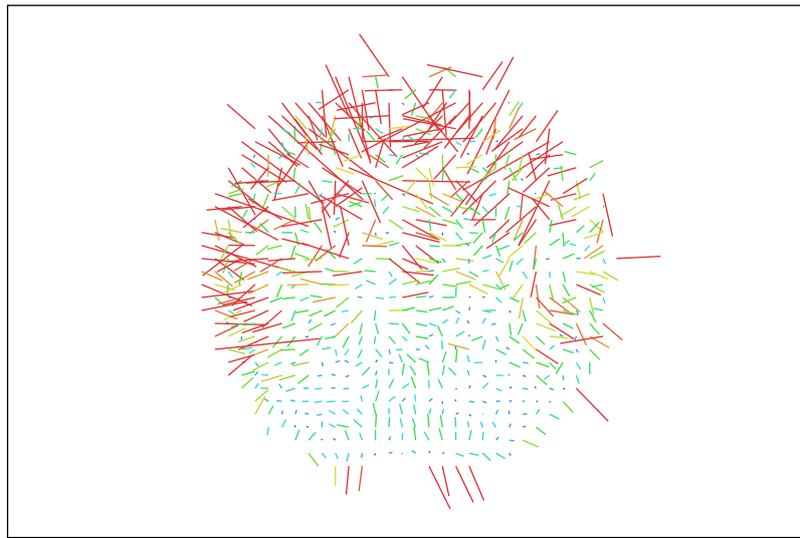
Fig. 8. Image residuals for 46.

46

60 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	**1438.43**	0.024	1.00	0.02	0.12	-0.83	0.71	-0.64	0.01	-0.02
Cx	**-11.845**	0.019		1.00	0.01	-0.01	0.01	-0.01	-0.67	0.02
Cy	**-14.2509**	0.041			1.00	-0.03	0.03	-0.03	0.01	-0.85
K1	**-0.00428357**	3.2e-05				1.00	-0.97	0.92	0.00	-0.00
K2	**0.000205192**	2.3e-05					1.00	-0.99	-0.01	-0.03
K3	**-0.00126083**	5.3e-06						1.00	0.01	0.03
P1	**-0.000189538**	1.5e-06							1.00	-0.04
P2	**6.56981e-05**	2.6e-06								1.00

Table 8. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
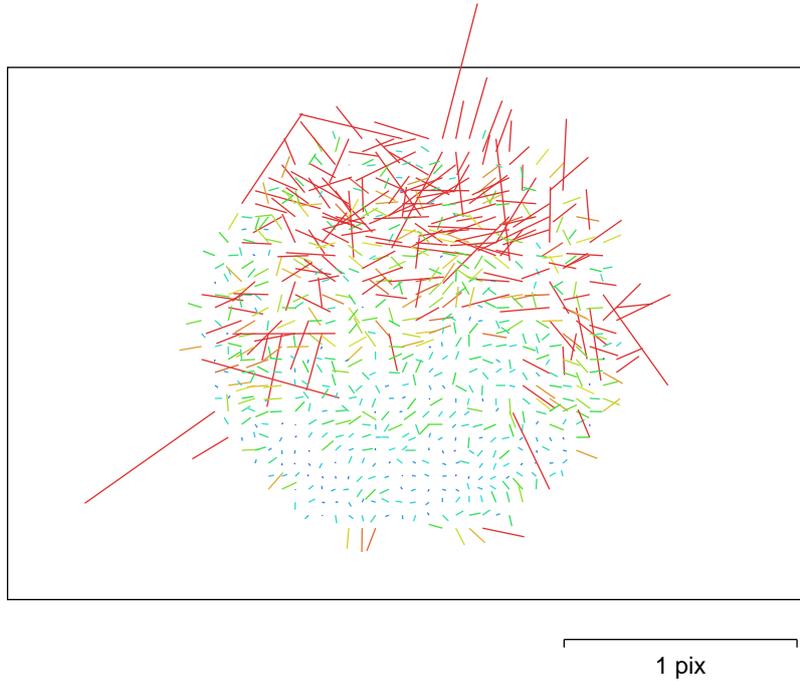
Fig. 9. Image residuals for 47.

47

60 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	**1450.34**	0.026	1.00	0.03	0.11	-0.84	0.73	-0.66	0.02	-0.01
Cx	**16.6294**	0.019		1.00	0.02	-0.03	0.02	-0.02	-0.67	0.02
Cy	**-37.7951**	0.043			1.00	-0.02	0.02	-0.02	0.01	-0.85
K1	**-0.00328795**	3.4e-05				1.00	-0.97	0.92	-0.01	-0.02
K2	**-0.000284347**	2.5e-05					1.00	-0.99	0.00	-0.02
K3	**-0.00117183**	5.6e-06						1.00	-0.00	0.02
P1	**-0.000191611**	1.6e-06							1.00	-0.04
P2	**0.000111384**	2.7e-06								1.00

Table 9. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
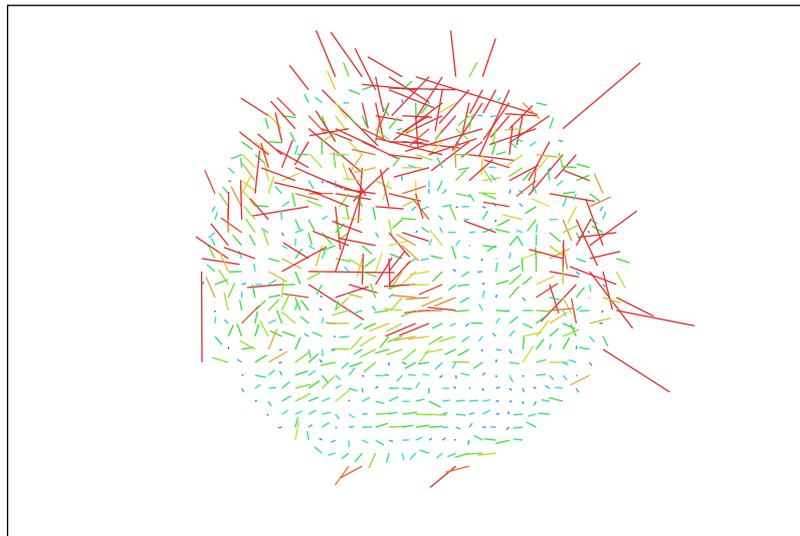
Fig. 10. Image residuals for 48.

48

60 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	**1438.44**	0.029	1.00	0.04	0.09	-0.86	0.75	-0.69	0.03	0.00
Cx	**11.5232**	0.021		1.00	0.01	-0.04	0.04	-0.03	-0.68	0.02
Cy	**-36.5663**	0.044			1.00	-0.01	0.01	-0.01	0.02	-0.84
K1	**-0.00378252**	4.1e-05				1.00	-0.97	0.93	-0.02	-0.03
K2	**0.000167907**	2.9e-05					1.00	-0.99	0.01	-0.01
K3	**-0.00124082**	6.5e-06						1.00	-0.01	0.01
P1	**0.000300435**	1.7e-06							1.00	-0.03
P2	**-0.000169221**	2.8e-06								1.00

Table 10. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
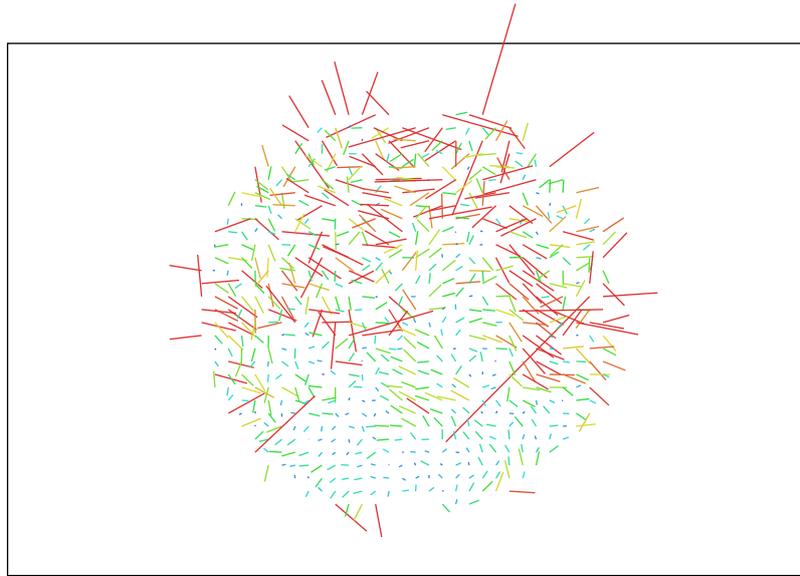
Fig. 11. Image residuals for 49.

49

60 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	**1436.33**	0.029	1.00	0.06	0.09	-0.85	0.74	-0.67	0.01	-0.01
Cx	**-11.1059**	0.022		1.00	0.00	-0.06	0.05	-0.04	-0.69	0.04
Cy	**-18.7369**	0.045			1.00	0.00	-0.01	0.00	0.02	-0.84
K1	**-0.00396924**	4e-05				1.00	-0.97	0.93	-0.01	-0.04
K2	**0.000188842**	2.9e-05					1.00	-0.99	0.01	0.01
K3	**-0.00124688**	6.5e-06						1.00	-0.01	0.00
P1	**-0.000167272**	1.7e-06							1.00	-0.04
P2	**1.6188e-05**	2.8e-06								1.00

Table 11. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
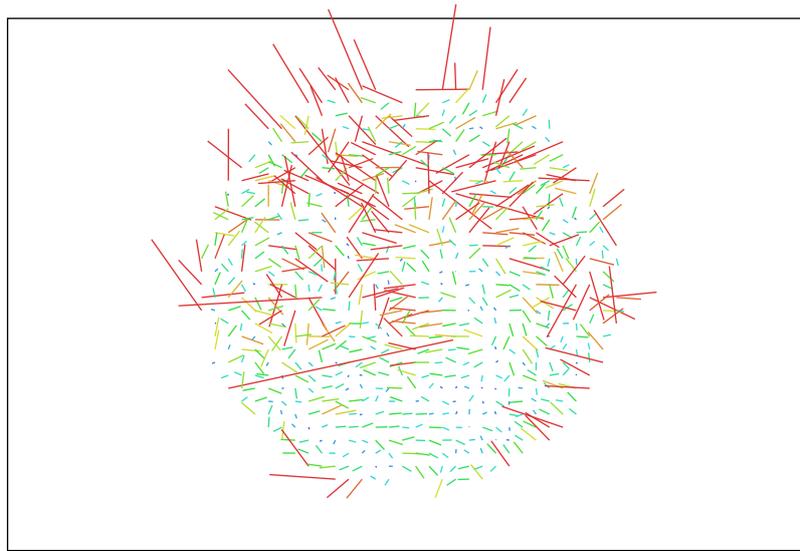
Fig. 12. Image residuals for 50.

50

60 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	**1444.46**	0.034	1.00	0.05	0.07	-0.85	0.75	-0.68	0.02	-0.01
Cx	**11.6715**	0.026		1.00	-0.00	-0.06	0.04	-0.03	-0.70	0.05
Cy	**-22.5845**	0.047			1.00	0.01	-0.01	0.01	0.02	-0.82
K1	**-0.00479599**	4.9e-05				1.00	-0.97	0.93	-0.02	-0.05
K2	**0.000508935**	3.6e-05					1.00	-0.99	0.02	0.01
K3	**-0.00131267**	8.1e-06						1.00	-0.02	-0.00
P1	**0.00018415**	1.9e-06							1.00	-0.04
P2	**3.94046e-05**	3e-06								1.00

Table 12. Calibration coefficients and correlation matrix.

Camera Calibration
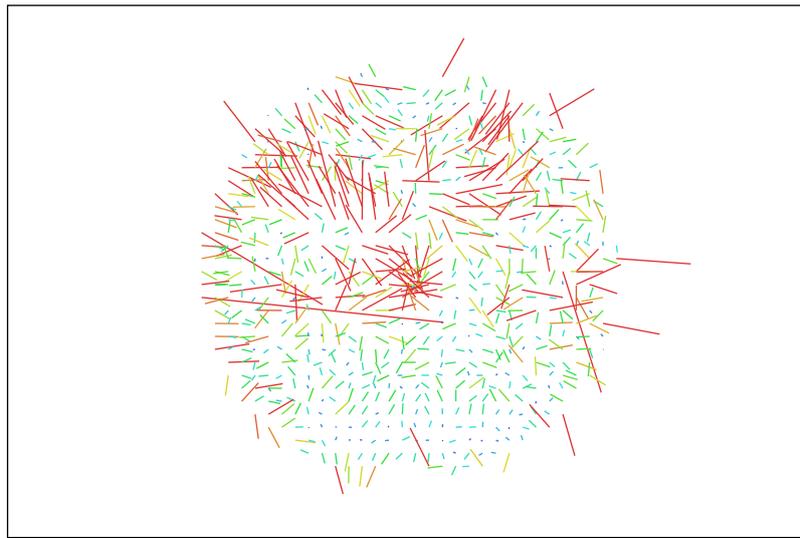
1 pix

Fig. 13. Image residuals for 51.

51

60 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	**1440.78**	0.03	1.00	0.02	0.09	-0.84	0.74	-0.67	0.03	-0.05
Cx	**1.18347**	0.023		1.00	-0.01	-0.03	0.02	-0.02	-0.68	0.04
Cy	**-1.69038**	0.047			1.00	0.02	-0.02	0.02	0.02	-0.83
K1	**-0.00357735**	4.3e-05				1.00	-0.97	0.93	-0.02	-0.04
K2	**4.12766e-05**	3.2e-05					1.00	-0.99	0.02	0.00
K3	**-0.00124155**	7.4e-06						1.00	-0.02	0.01
P1	**-0.000178887**	1.7e-06							1.00	-0.04
P2	**-0.000537123**	3e-06								1.00

Table 13. Calibration coefficients and correlation matrix.

Camera Calibration

1 pix
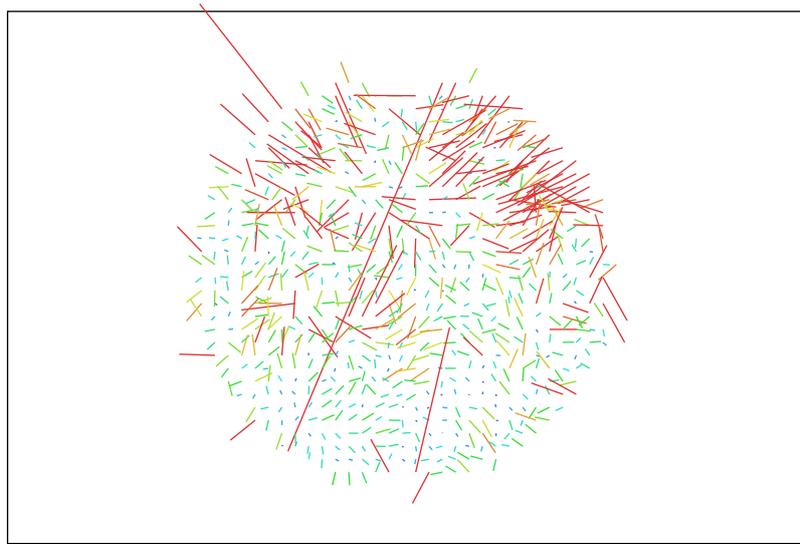
Fig. 14. Image residuals for 52.

52

60 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	**1441.82**	0.032	1.00	0.01	0.09	-0.84	0.74	-0.67	0.04	-0.05
Cx	**-12.1331**	0.024		1.00	-0.01	-0.01	0.00	0.00	-0.67	0.05
Cy	**-8.95756**	0.048			1.00	0.03	-0.02	0.02	0.02	-0.81
K1	**-0.00352858**	4.6e-05				1.00	-0.97	0.93	-0.03	-0.04
K2	**-9.74543e-05**	3.5e-05					1.00	-0.99	0.03	-0.00
K3	**-0.00117863**	8e-06						1.00	-0.03	0.01
P1	**-8.35204e-05**	1.8e-06							1.00	-0.05
P2	**-0.000473528**	3.2e-06								1.00

Table 14. Calibration coefficients and correlation matrix.

Camera Calibration
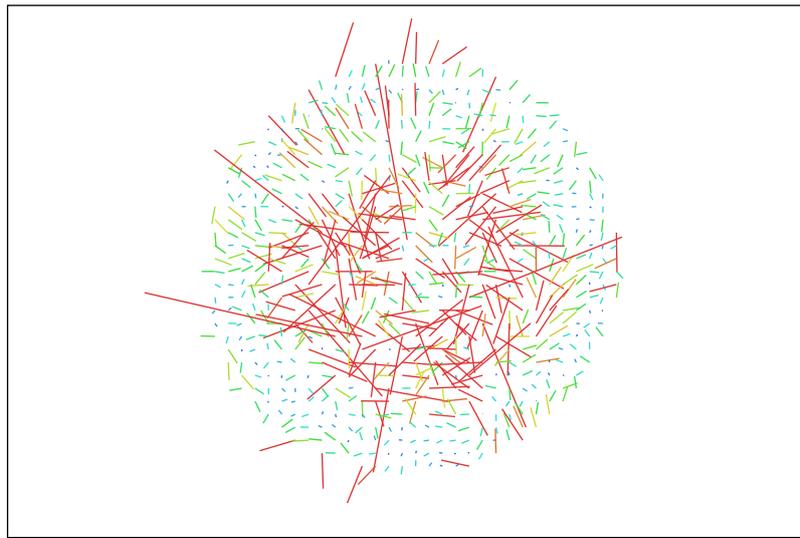
1 pix

Fig. 15. Image residuals for 53.

53

60 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	**1425.09**	0.12	1.00	0.01	-0.01	-0.89	0.78	-0.72	0.00	-0.04
Cx	**27.8577**	0.025		1.00	-0.04	-0.02	0.02	-0.02	-0.80	0.02
Cy	**-52.3888**	0.027			1.00	0.04	-0.06	0.07	0.03	-0.78
K1	**0.00575141**	0.00015				1.00	-0.98	0.93	0.00	-0.02
K2	**-0.00246363**	9.6e-05					1.00	-0.99	-0.01	0.06
K3	**-0.00116531**	2e-05						1.00	0.02	-0.10
P1	**-0.000232822**	2.9e-06							1.00	-0.03
P2	**-0.000156929**	3.3e-06								1.00

Table 15. Calibration coefficients and correlation matrix.

Scale Bars

Label	Distance (m)	Error (m)
002a. 4-5	0.250848	0.000848351
002b. 5-6	0.249178	-0.00072204
005a. 12-13	0.24998	-4.2466e-15
005b. 13-14	0.249879	-1.1455e-05
008a. 20-21	0.249846	-0.000183858
008b. 21-22	0.249506	-0.000373692
Total		**0.000485562**

Table 16. Control scale bars.

Digital Elevation Model
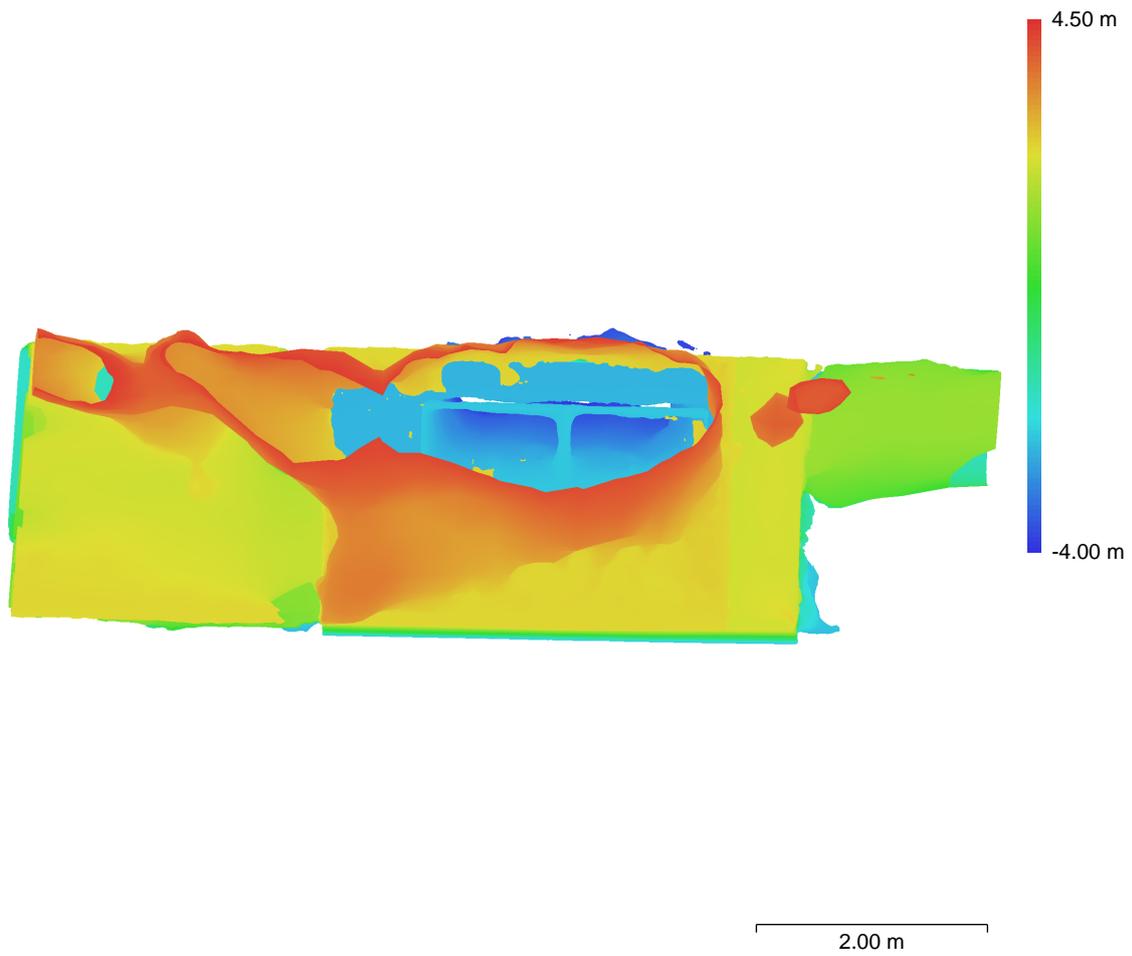

Fig. 16. Reconstructed digital elevation model.

Resolution: 4.19 mm/pix
Point density: 5.70 points/cm^2

Processing Parameters

General

Images	840
Aligned images	840
Markers	11
Scale bars	6
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	319,533 of 928,754
RMS reprojection error	0.228637 (0.368091 pix)
Max reprojection error	0.959418 (4.56134 pix)
Mean key point size	1.52623 pix
Point colors	3 bands, uint8
Key points	3.98 GB
Average tie point multiplicity	3.11434

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	6 minutes 5 seconds
Matching memory usage	10.58 GB
Alignment time	58 seconds
Alignment memory usage	3.53 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	2026:02:23 16:42:07
Software version	2.2.2.21287
File size	4.04 GB

Depth Maps

Count	831

Depth maps generation parameters

Quality	Medium
Filtering mode	Mild
Max neighbors	16
Processing time	7 minutes 10 seconds
Memory usage	4.22 GB
Date created	2026:02:24 08:40:16
Software version	2.2.2.21287
File size	931.11 MB

Point Cloud

Points	30,759,520
Coordinate precision	0.629 mm

Point attributes
    Color   3 bands, uint8
    Normal
Point classes
    Created (never classified)   30,759,520
Depth maps generation parameters
    Quality   Medium
    Filtering mode   Mild
    Max neighbors   16
    Processing time   7 minutes 10 seconds
    Memory usage   4.22 GB
Point cloud generation parameters
    Source data   Depth maps
    Processing time   37 minutes 18 seconds
    Memory usage   27.94 GB
  Date created   2026:02:24 09:17:35
  Software version   2.2.2.21287
  File size   413.23 MB

Model
  Faces   2,002,205
  Vertices   1,001,961
  Vertex colors   3 bands, uint8
  Texture   16,384 x 16,384, 3 bands, uint8
Depth maps generation parameters
    Quality   Medium
    Filtering mode   Mild
    Max neighbors   16
    Processing time   7 minutes 10 seconds
    Memory usage   4.22 GB
Reconstruction parameters
    Surface type   Arbitrary
    Source data   Depth maps
    Interpolation   Enabled
    Strict volumetric masks   No
    Processing time   2 minutes 5 seconds
    Memory usage   7.31 GB
Texturing parameters
    Mapping mode   Generic
    Blending mode   Mosaic
    Texture size   16,384
    Page count   1
    Enable hole filling   Yes
    Enable ghosting filter   Yes
    UV mapping time   2 minutes 57 seconds
    UV mapping memory usage   1.41 GB
    Blending time   2 minutes 57 seconds
    Blending memory usage   9.64 GB
    Blending GPU memory usage   7.60 GB
  Date created   2026:02:24 09:19:38
  Software version   2.2.2.21287
  File size   305.15 MB

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