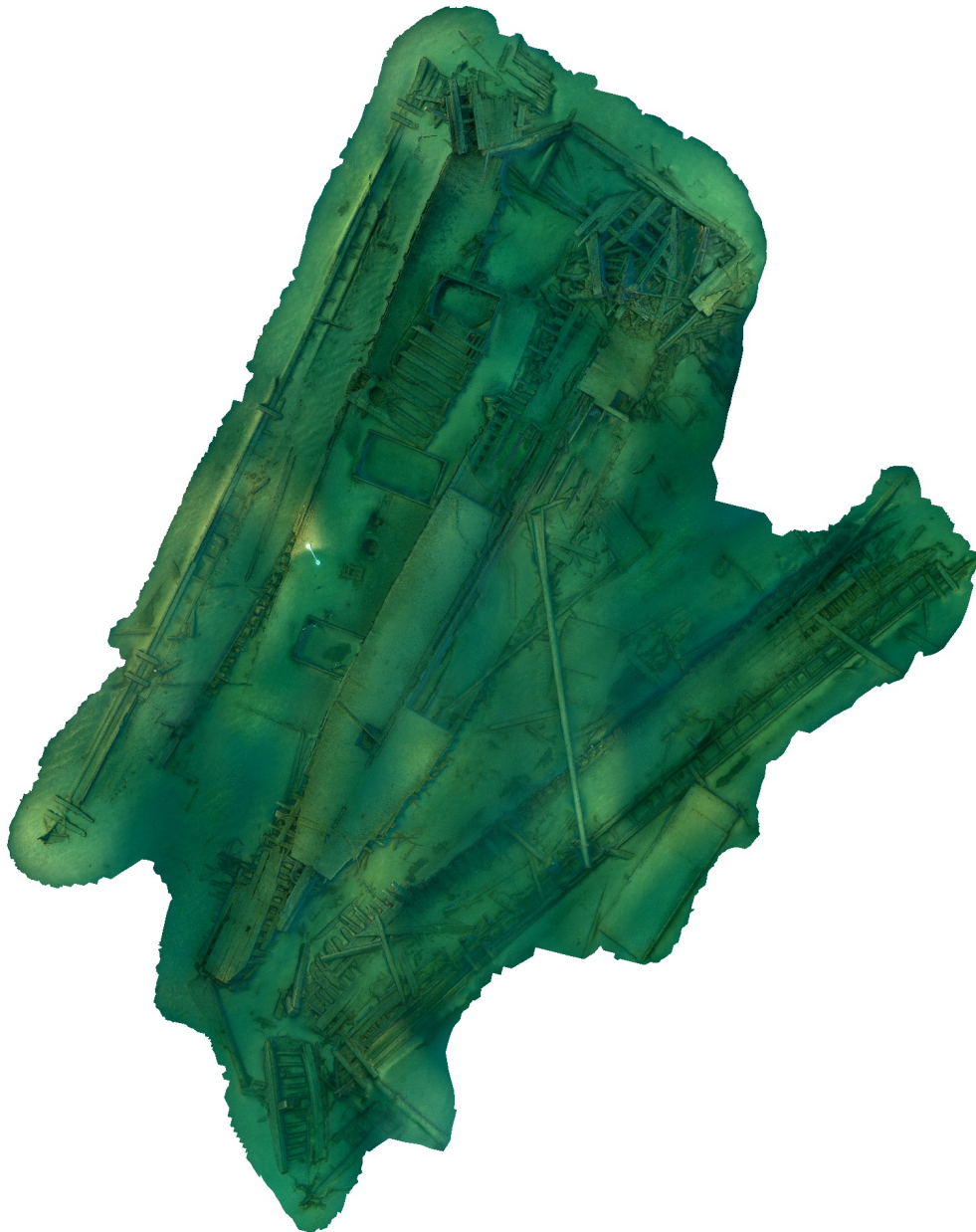


# Agisoft Metashape

Processing Report  
04 December 2023



# Survey Data

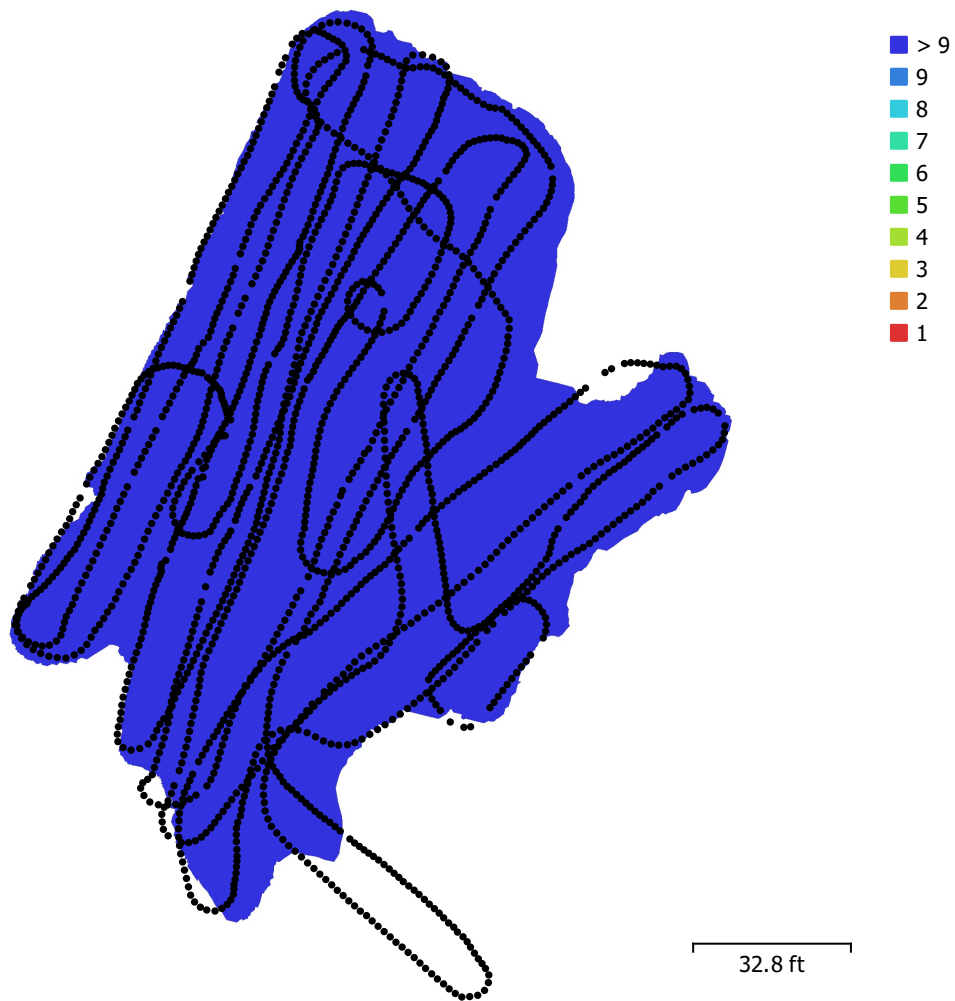


Fig. 1. Camera locations and image overlap.

Number of images:	1,928	Camera stations:	1,927
Flying altitude:	7.71 ft	Tie points:	562,767
Ground resolution:	0.0025 ft/pix	Projections:	1,504,021
Coverage area:	1.4e+04 ft <sup>2</sup>	Reprojection error:	2.76 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Canon EOS 5D Mark IV, ...	6720 x 4480	15 mm	5.36 x 5.36 μm	No

Table 1. Cameras.

# Camera Calibration

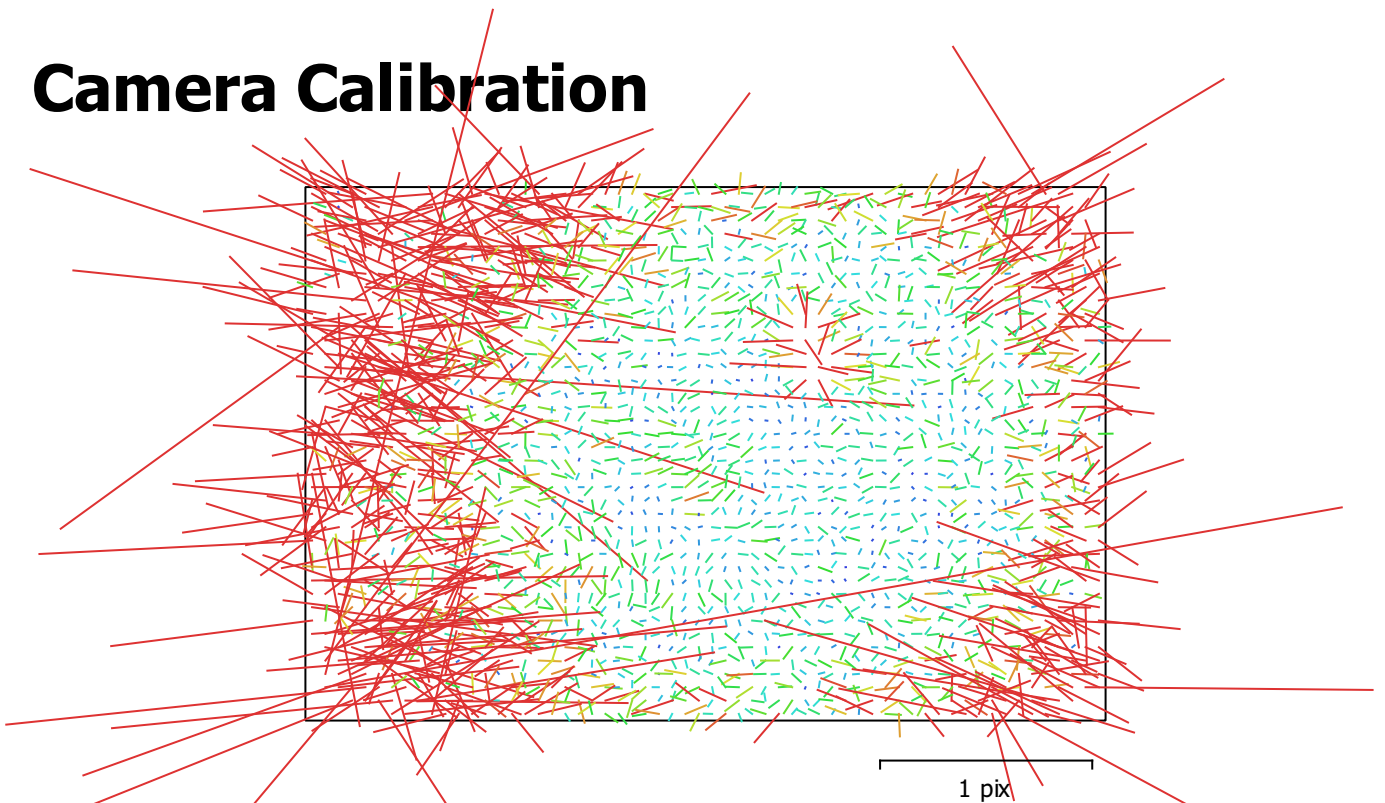


Fig. 2. Image residuals for Canon EOS 5D Mark IV, EF8-15mm f/4L FISHEYE USM (15mm).

## Canon EOS 5D Mark IV, EF8-15mm f/4L FISHEYE USM (15mm)

1928 images

Type	Resolution	Focal Length	Pixel Size
<b>Fisheye</b>	<b>6720 x 4480</b>	<b>15 mm</b>	<b>5.36 x 5.36 <math>\mu</math>m</b>

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>F</b>	<b>3089.36</b>	0.12	1.00	-0.63	-0.06	-0.52	0.18	-0.12	0.52	0.07
<b>Cx</b>	<b>-8.6158</b>	0.092		1.00	0.03	0.13	0.07	-0.06	-0.77	-0.05
<b>Cy</b>	<b>-29.5678</b>	0.082			1.00	0.04	0.00	-0.00	-0.05	-0.69
<b>K1</b>	<b>-0.0465719</b>	4.1e-05				1.00	-0.86	0.75	-0.24	-0.05
<b>K2</b>	<b>0.0056632</b>	6.1e-05					1.00	-0.97	-0.06	-0.01
<b>K3</b>	<b>-0.00143819</b>	3e-05						1.00	0.07	0.01
<b>P1</b>	<b>-0.000123192</b>	5.9e-06							1.00	0.10
<b>P2</b>	<b>-4.85635e-05</b>	4.2e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

# Scale Bars

<b>Label</b>	<b>Distance (m)</b>	<b>Error (m)</b>
target 155_target 156	0.9144	7.77156e-16
<b>Total</b>		<b>7.77156e-16</b>

Table 3. Control scale bars.

# Digital Elevation Model

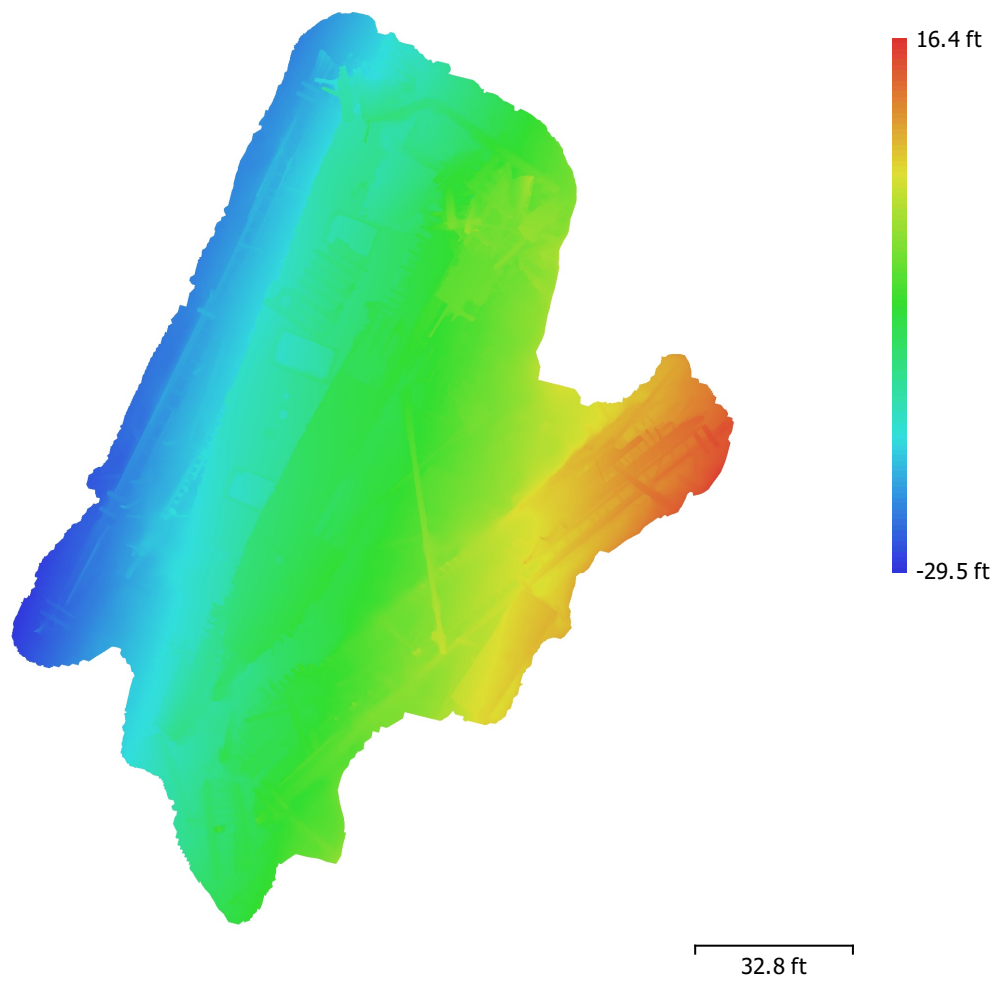


Fig. 3. Reconstructed digital elevation model.

Resolution: unknown  
Point density: unknown

# Processing Parameters

## General

Cameras	1928
Aligned cameras	1927
Markers	2
Scale bars	1
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	562,767 of 648,848
RMS reprojection error	0.176953 (2.75695 pix)
Max reprojection error	0.751296 (66.2546 pix)
Mean key point size	12.1975 pix
Point colors	3 bands, uint8
Key points	4.72 GB
Average tie point multiplicity	2.77747

## Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	No
Key point limit	30,000
Key point limit per Mpx	1,000
Tie point limit	2,500
Filter points by mask	Yes
Mask tie points	No
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	41 minutes 22 seconds
Matching memory usage	1.20 GB
Alignment time	7 minutes 45 seconds
Alignment memory usage	416.25 MB

## Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	7 seconds
Date created	2023:12:04 07:09:37
Software version	1.8.0.13794
File size	55.99 MB

## Depth Maps

Count	1906
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## Depth maps generation parameters

Quality	Medium
Filtering mode	Moderate
Max neighbors	16
Processing time	36 minutes 58 seconds
Memory usage	1.50 GB
Date created	2023:12:04 07:54:42
Software version	1.8.0.13794
File size	1.36 GB

## Dense Point Cloud

Points	193,114,827
Point colors	3 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	Medium
Filtering mode	Moderate
Max neighbors	16
Processing time	36 minutes 58 seconds
Memory usage	1.50 GB
<b>Dense cloud generation parameters</b>	
Processing time	1 hours 28 minutes
Memory usage	5.47 GB
Date created	2023:12:04 10:11:52
Software version	1.8.0.13794
File size	2.48 GB
<b>Model</b>	
Faces	7,999,999
Vertices	4,000,461
Vertex colors	3 bands, uint8
Texture	8,192 x 8,192, 4 bands, uint8
<b>Depth maps generation parameters</b>	
Quality	Medium
Filtering mode	Moderate
Max neighbors	16
Processing time	36 minutes 58 seconds
Memory usage	1.50 GB
<b>Reconstruction parameters</b>	
Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	8 minutes 52 seconds
Memory usage	4.95 GB
<b>Texturing parameters</b>	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	8,192
Enable hole filling	Yes
Enable ghosting filter	No
UV mapping time	1 minutes 59 seconds
UV mapping memory usage	2.57 GB
Blending time	7 minutes 34 seconds
Blending memory usage	4.47 GB
Blending GPU memory usage	2.43 GB
Date created	2023:12:04 08:03:03
Software version	1.8.0.13794
File size	411.85 MB
<b>System</b>	
Software name	Agisoft Metashape Professional
Software version	1.8.0 build 13794
OS	Windows 64 bit
RAM	63.92 GB
CPU	Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz
GPU(s)	NVIDIA GeForce RTX 2060 SUPER