

# Transfer Processing Report

Processing Report  
16 September 2019



# Survey Data



Fig. 1. Camera locations and image overlap.

Number of images: 1,347

Camera stations: 1,285

Tie points: 492,040

Projections: 1,288,126

Reprojection error: 1.41 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
HERO5 Black (3mm)	2048 x 1536	3 mm	2.98 x 2.98 $\mu\text{m}$	No

Table 1. Cameras.

# Camera Calibration

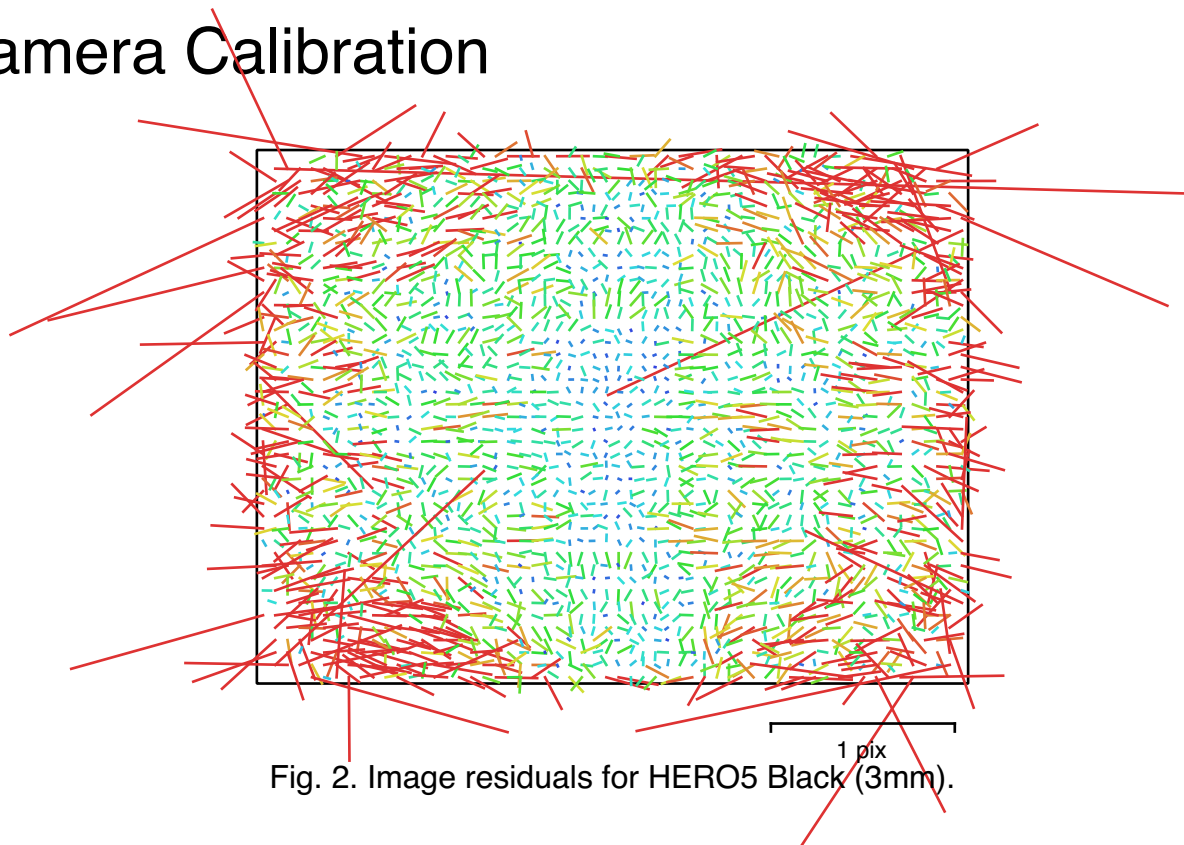


Fig. 2. Image residuals for HERO5 Black (3mm).

HERO5 Black (3mm)  
1347 images

Type	Resolution	Focal Length	Pixel Size
Frame	2048 x 1536	3 mm	2.98 x 2.98 $\mu\text{m}$

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	1393.92	0.12	1.00	-0.09	0.05	0.08	0.20	-0.05	-0.09	0.00
Cx	-0.474415	0.054		1.00	-0.00	-0.03	-0.00	-0.00	0.87	-0.00
Cy	-1.09556	0.064			1.00	0.01	0.00	0.01	0.01	0.90
K1	0.367017	0.00035				1.00	-0.91	0.89	-0.03	0.00
K2	0.11988	0.0017					1.00	-0.97	-0.01	-0.00
K3	0.412267	0.0028						1.00	0.00	0.01
P1	4.35365e-05	3.1e-05							1.00	0.02
P2	-0.000723506	3.9e-05								1.00

Table 2. Calibration coefficients and correlation matrix.

# Digital Elevation Model

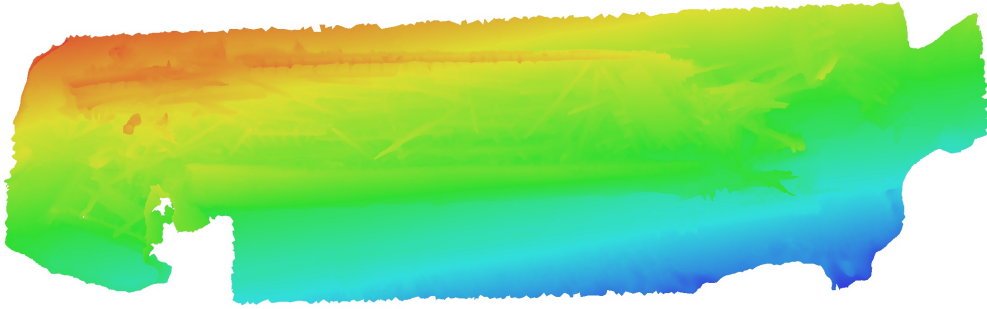


Fig. 3. Reconstructed digital elevation model.

# Processing Parameters

## General

Cameras	1347
Aligned cameras	1285
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	492,040 of 548,950
RMS reprojection error	0.193907 (1.4069 pix)
Max reprojection error	0.585569 (28.571 pix)
Mean key point size	7.01061 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.7491
Alignment parameters	
Accuracy	Highest
Generic preselection	Yes
Key point limit	40,000
Tie point limit	4,000
Adaptive camera model fitting	No
Matching time	5 hours 28 minutes
Alignment time	14 minutes 16 seconds

## Dense Point Cloud

Points	3,846,862
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Low
Filtering mode	Moderate
Processing time	19 minutes 42 seconds
Dense cloud generation parameters	
Processing time	10 minutes 58 seconds

## Model

Faces	70,919
Vertices	36,094
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096, 4 bands, uint8
Depth maps generation parameters	
Quality	Low
Filtering mode	Moderate
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Processing time	3 minutes 7 seconds
Texturing parameters	
Mapping mode	Orthophoto
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	0 seconds
Blending time	12 minutes 5 seconds

General

Orthomosaic

Size	24,078 x 10,510
Coordinate system	Local Coordinates (m)
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	Mesh
Enable hole filling	Yes
Processing time	3 minutes 57 seconds

Software

Version	1.5.5 build 9057
Platform	Mac OS 64