

FFCC

Processing Report
26 June 2024



Survey Data



Fig. 1. Camera locations and image overlap.

Number of images:	1,077	Camera stations:	1,077
Flying altitude:	115 m	Tie points:	634,980
Ground resolution:	3.12 cm/pix	Projections:	3,785,376
Coverage area:	1.16 km ²	Reprojection error:	0.89 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
M3E (12.29mm)	5280 x 3956	12.29 mm	3.36 x 3.36 μm	Yes

Table 1. Cameras.

Camera Calibration

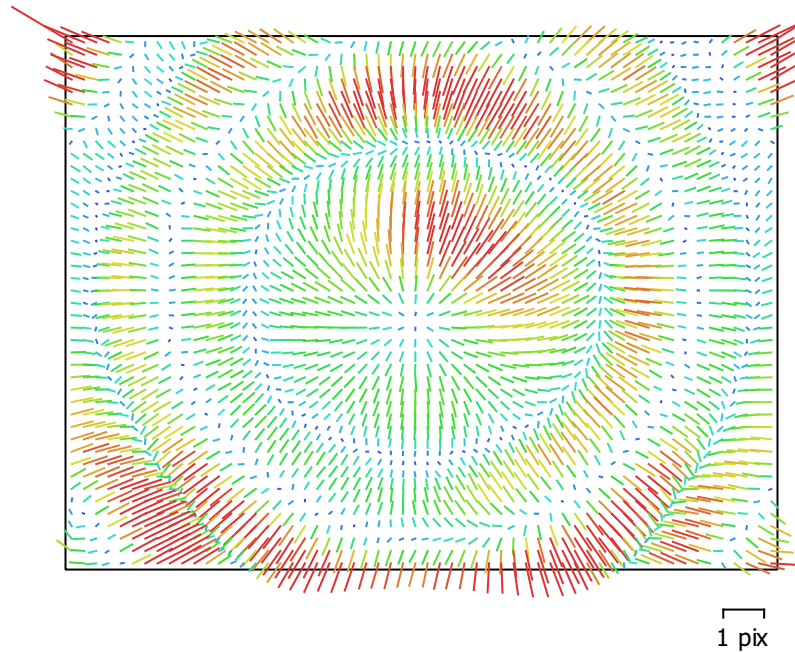


Fig. 2. Image residuals for M3E (12.29mm).

M3E (12.29mm)

1077 images, precalibrated

Type	Resolution	Focal Length	Pixel Size
Frame	5280 x 3956	12.29 mm	3.36 x 3.36 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	3709.34	0.014	1.00	0.00	-0.12	-0.34	0.25	-0.24	-0.00	0.07
Cx	23.314	0.0077		1.00	0.00	0.01	-0.01	0.01	0.48	0.03
Cy	-63.0324	0.0079			1.00	-0.01	0.03	-0.03	0.02	0.35
K1	-0.10587	9.4e-06				1.00	-0.97	0.91	0.00	-0.04
K2	0.000510201	2.4e-05					1.00	-0.98	-0.01	0.04
K3	-0.018159	1.8e-05						1.00	0.01	-0.05
P1	-1.21878e-05	3.9e-07							1.00	0.00
P2	-0.000237953	4.2e-07								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

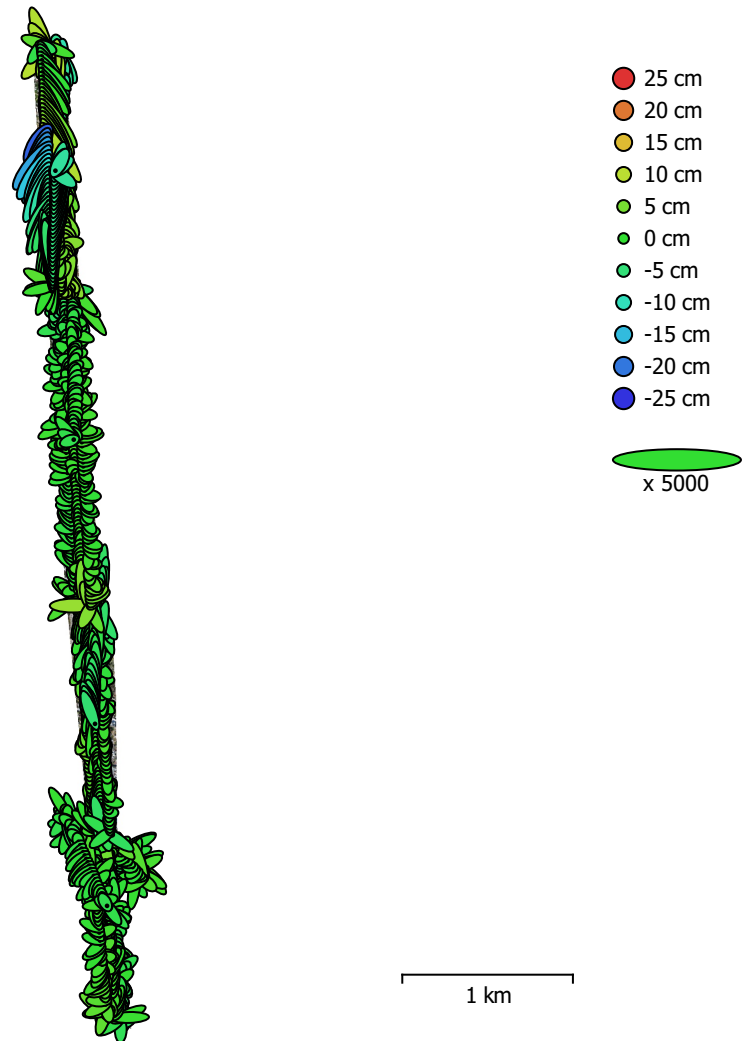


Fig. 3. Camera locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated camera locations are marked with a black dot.

X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total error (cm)
1.03969	2.17739	3.61986	2.41288	4.35033

Table 3. Average camera location error.

X - Easting, Y - Northing, Z - Altitude.

Digital Elevation Model



Fig. 4. Reconstructed digital elevation model.

Resolution: 6.24 cm/pix
Point density: 257 points/m²

Processing Parameters

General

Cameras	1077
Aligned cameras	1077
Shapes	
Polygon	1
Coordinate system	WGS 84 / UTM zone 21S EGM08
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	634,980 of 745,703
RMS reprojection error	0.259033 (0.889573 pix)
Max reprojection error	0.780253 (67.9559 pix)
Mean key point size	3.00527 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	6.31518

Alignment parameters

Accuracy	High
Generic preselection	No
Reference preselection	Source
Key point limit	40,000
Key point limit per Mpx	1,000
Tie point limit	4,000
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	3 hours 38 minutes
Matching memory usage	5.57 GB
Alignment time	6 minutes 28 seconds
Alignment memory usage	405.33 MB
Date created	2024:06:11 22:05:26
Software version	2.1.0.17532
File size	88.67 MB

Depth Maps

Count	1077
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Max neighbors	16
Processing time	11 hours 39 minutes
Memory usage	5.48 GB
Date created	2024:06:12 21:31:42
Software version	2.1.0.17532
File size	7.98 GB

Point Cloud

Points	595,157,379
Point attributes	
Color	3 bands, uint8
Normal	
Confidence	1 - 39
Point classes	

Created (never classified)	595,157,379
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Max neighbors	16
Processing time	11 hours 39 minutes
Memory usage	5.48 GB
Point cloud generation parameters	
Processing time	2 hours 45 minutes
Memory usage	10.35 GB
Date created	2024:06:13 00:17:33
Software version	2.1.0.17532
File size	8.39 GB
DEM	
Size	13,423 x 94,697
Coordinate system	WGS 84 / UTM zone 21S EGM08
Reconstruction parameters	
Source data	Point cloud
Interpolation	Enabled
Processing time	39 minutes 44 seconds
Memory usage	321.13 MB
Date created	2024:06:13 14:55:10
Software version	2.1.0.17532
File size	2.64 GB
Orthomosaic	
Size	26,846 x 189,394
Coordinate system	WGS 84 / UTM zone 21S EGM08
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Enable ghosting filter	No
Processing time	53 minutes 45 seconds
Memory usage	2.60 GB
Date created	2024:06:13 15:55:21
Software version	2.1.0.17532
File size	29.81 GB
System	
Software name	Agisoft Metashape Professional
Software version	2.1.0 build 17532
OS	Windows 64 bit
RAM	63.93 GB
CPU	Intel(R) Core(TM) i7-9700F CPU @ 3.00GHz
GPU(s)	Intel(R) FPGA Emulation Device Radeon(TM) RX 460 Graphics (Baffin)