HalletPeak_Metashape

Processing Report

19 July 2022

Survey Data

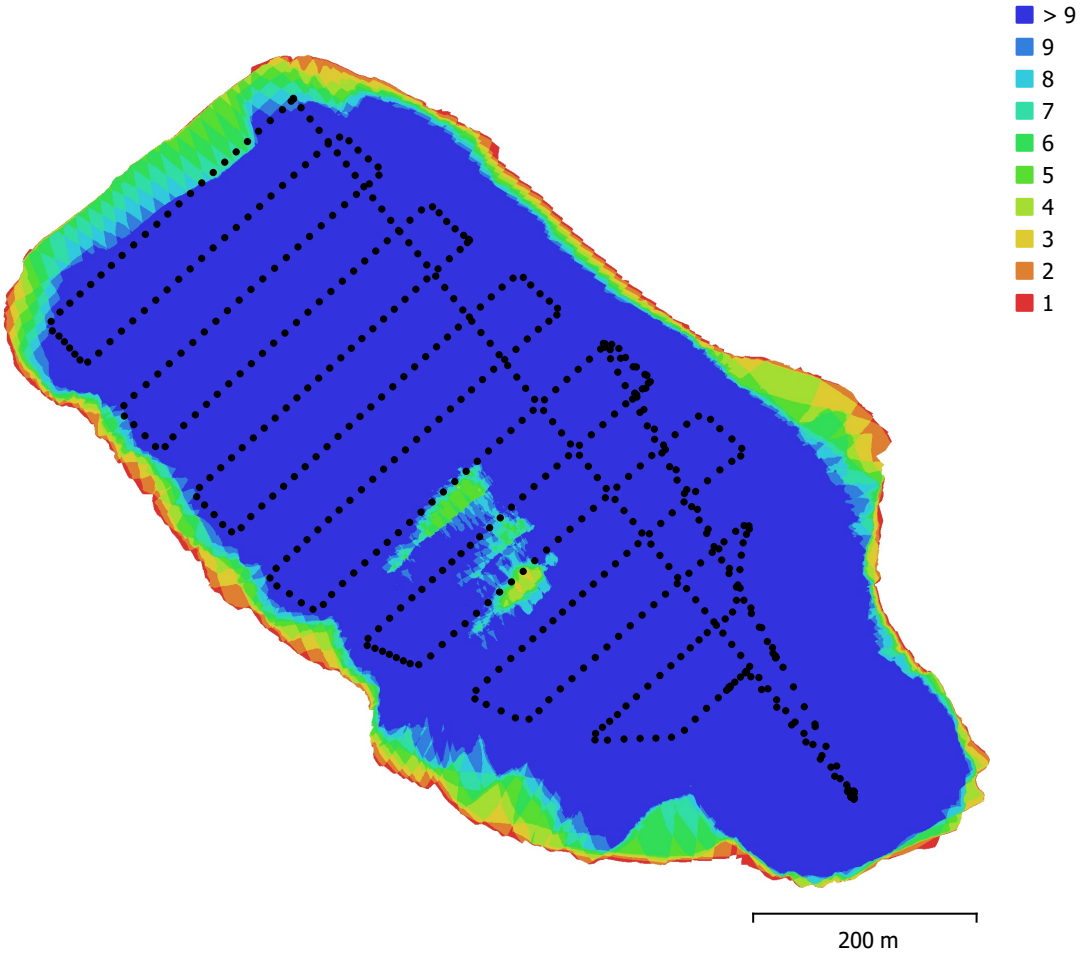

Fig. 1. Camera locations and image overlap.

Number of images:	692	Camera stations:	675
Flying altitude:	96.9 m	Tie points:	2,196,962
Ground resolution:	3.23 cm/pix	Projections:	6,829,183
Coverage area:	0.371 km²	Reprojection error:	0.442 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC220 (4.73mm)	4000 x 3000	4.73 mm	1.57 x 1.57 µm	No

Table 1. Cameras.

Camera Calibration

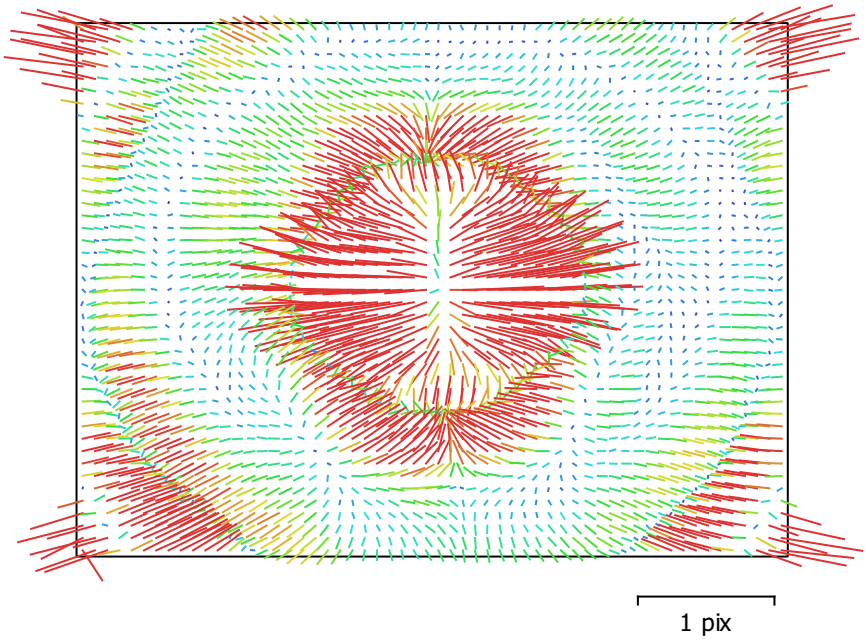

Fig. 2. Image residuals for FC220 (4.73mm).

FC220 (4.73mm)

692 images, rolling shutter

Type	Resolution	Focal Length	Pixel Size
Frame	**4000 x 3000**	**4.73 mm**	**1.57 x 1.57 µm**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**2956.95**	0.18	1.00	0.34	-0.78	0.13	0.00	-0.04	-0.18	-0.13
Cx	**-5.08578**	0.009		1.00	-0.24	0.05	0.00	-0.02	0.66	-0.02
Cy	**6.60568**	0.013			1.00	-0.13	0.01	0.02	0.16	0.61
K1	**0.0210629**	2.1e-05				1.00	-0.92	0.87	-0.03	-0.05
K2	**-0.0132183**	6.3e-05					1.00	-0.98	0.02	-0.01
K3	**0.00220372**	6.2e-05						1.00	-0.02	0.01
P1	**-0.00329312**	1e-06							1.00	0.05
P2	**-0.000333481**	1.2e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

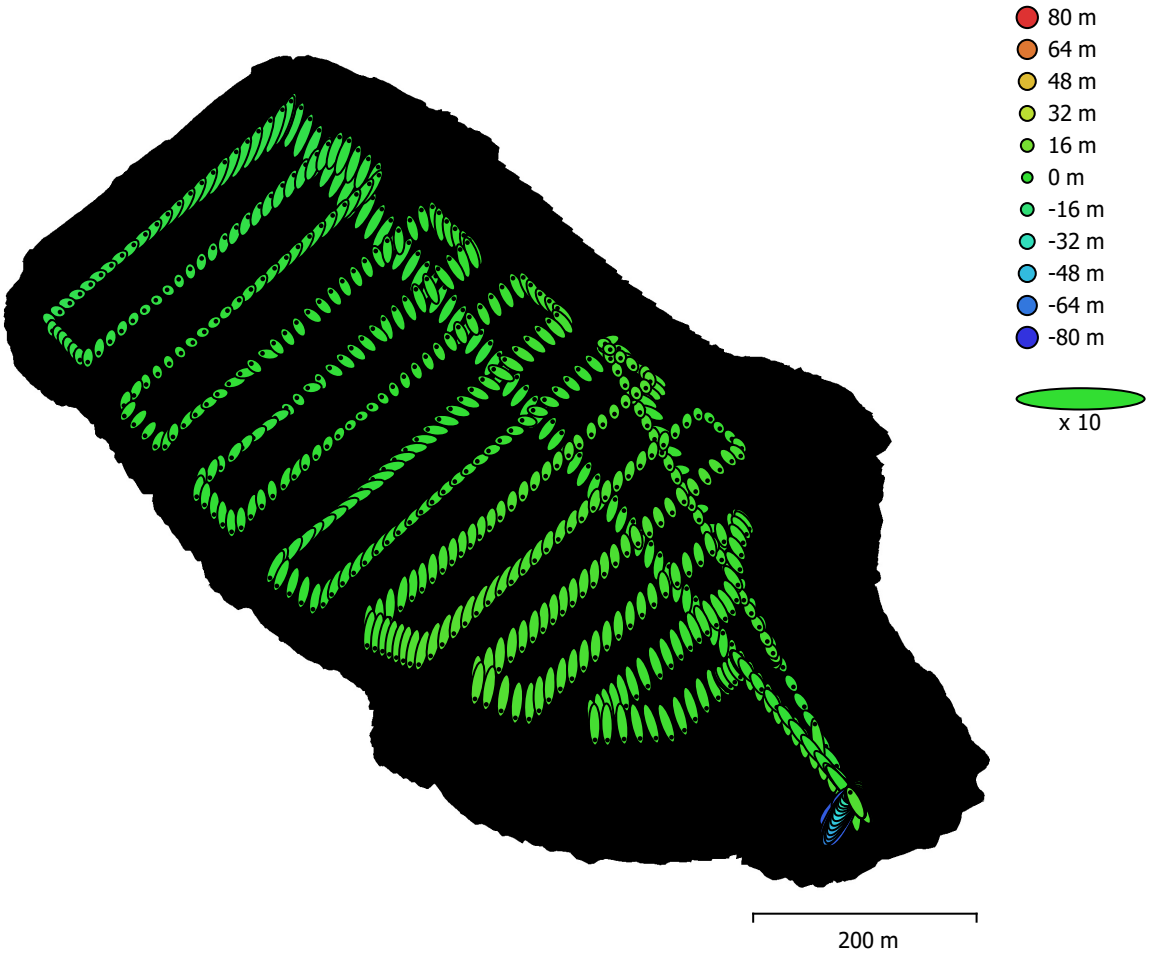

Fig. 3. Camera locations and error estimates.
Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.
Estimated camera locations are marked with a black dot.

X error (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
0.831597	1.54896	10.1448	1.75808	10.2961

Table 3. Average camera location error.
X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

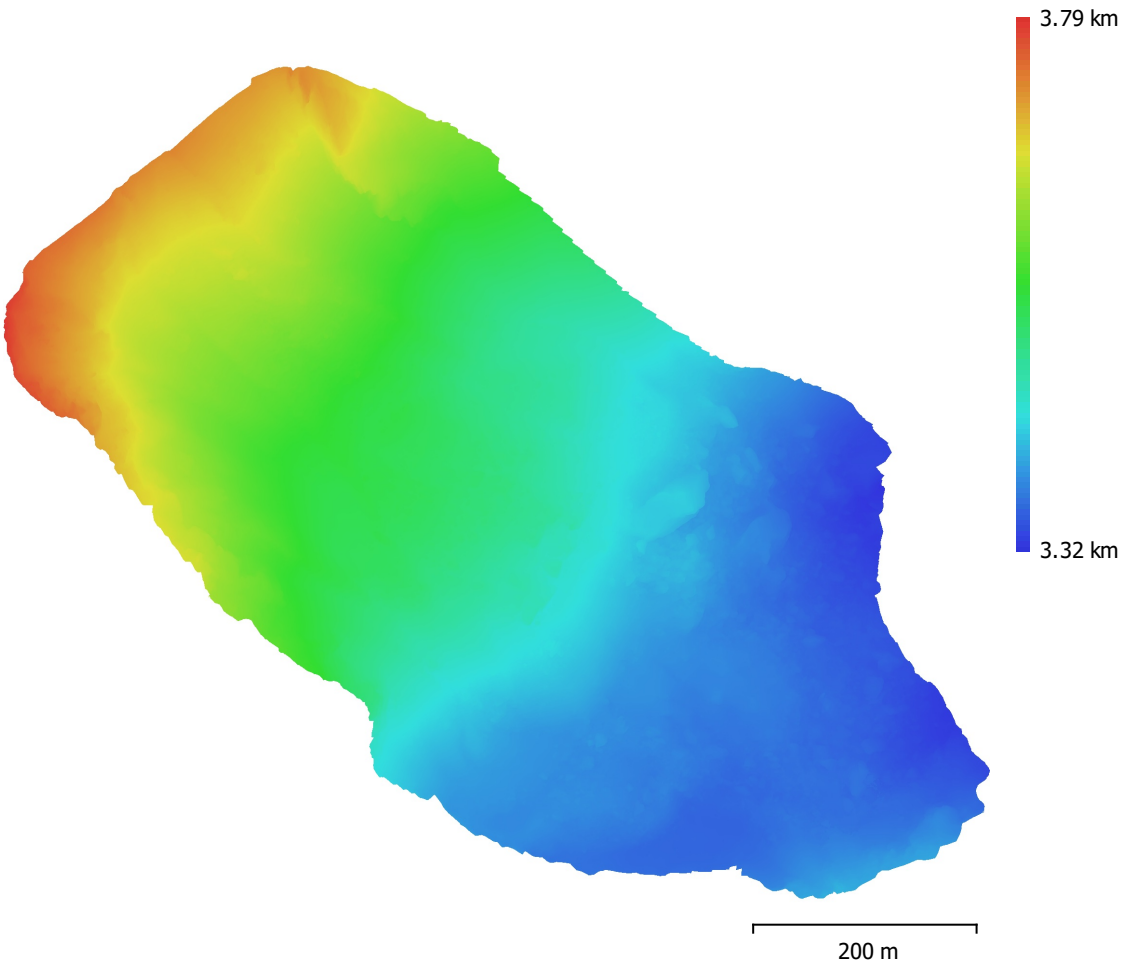

Fig. 4. Reconstructed digital elevation model.

Resolution:	12.6 cm/pix
Point density:	63.1 points/m²

Processing Parameters

General	
Cameras	692
Aligned cameras	675
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll
Point Cloud	
Points	2,196,962 of 4,695,505
RMS reprojection error	0.195618 (0.441516 pix)
Max reprojection error	1.41794 (4.54479 pix)
Mean key point size	2.22652 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.82304
Alignment parameters	
Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	60,000
Tie point limit	0
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	No
Matching time	8 minutes 24 seconds
Matching memory usage	4.91 GB
Alignment time	1 hours 33 minutes
Alignment memory usage	1.96 GB
Optimization parameters	
Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	1 minutes 2 seconds
Software version	1.7.2.12070
File size	337.72 MB
Depth Maps	
Count	672
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Processing time	24 minutes 21 seconds
Memory usage	3.35 GB
Software version	1.7.2.12070
File size	3.31 GB
Dense Point Cloud	
Points	165,050,215
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Processing time	24 minutes 21 seconds
Memory usage	3.35 GB
Dense cloud generation parameters	

Processing time	2 hours 25 minutes
Memory usage	10.94 GB
Software version	1.7.2.12070
File size	2.27 GB
Model	
Faces	11,734,666
Vertices	5,867,563
Vertex colors	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Processing time	24 minutes 21 seconds
Memory usage	3.35 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	1 hours 7 minutes
Memory usage	12.44 GB
Software version	1.7.2.12070
File size	268.59 MB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.2 build 12070
OS	Windows 64 bit
RAM	63.72 GB
CPU	Intel(R) Core(TM) i9-10980XE CPU @ 3.00GHz
GPU(s)	Quadro RTX 5000