

Outcrop 2

Processing Report

19 April 2022



Survey Data

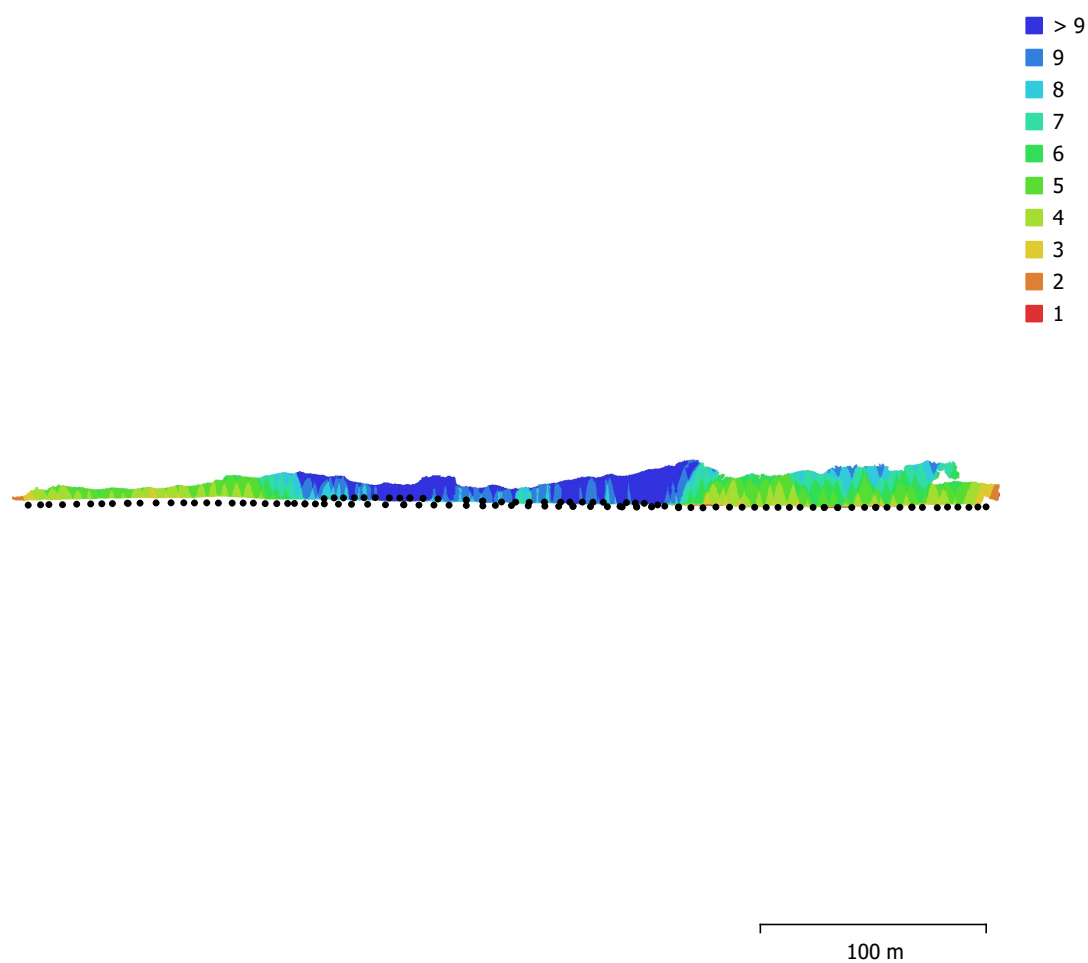


Fig. 1. Camera locations and image overlap.

Number of images:	118	Camera stations:	118
Flying altitude:	20.5 m	Tie points:	184,690
Ground resolution:	4.29 mm/pix	Projections:	569,420
Coverage area:	4.7e+03 m ²	Reprojection error:	0.516 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Test_Pro (10.26mm)	5472 x 3648	10.26 mm	2.41 x 2.41 μm	No

Table 1. Cameras.

Camera Calibration

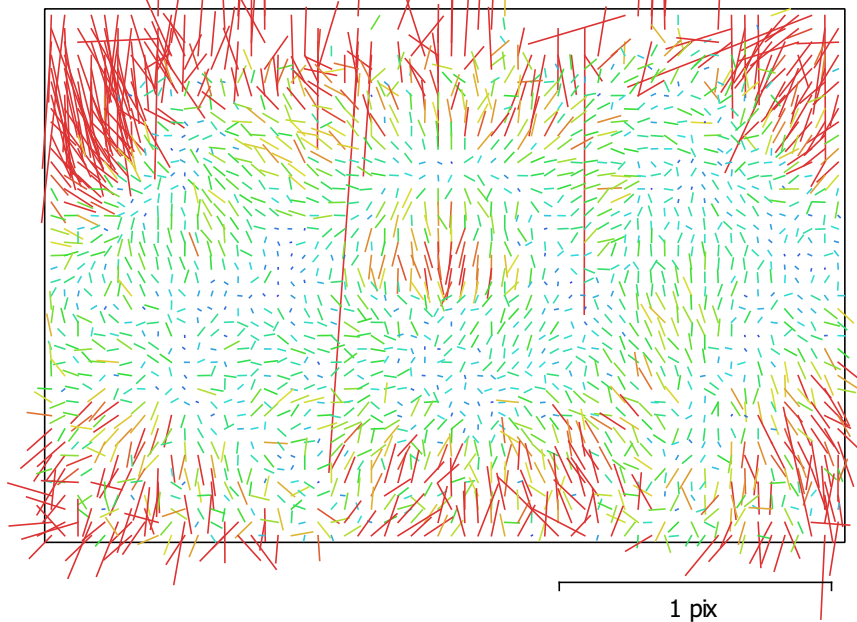


Fig. 2. Image residuals for Test_Pro (10.26mm).

Test_Pro (10.26mm)

118 images

Type	Resolution	Focal Length	Pixel Size
Frame	5472 x 3648	10.26 mm	2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	4322.5	0.15	1.00	0.10	-0.41	0.23	0.01	-0.00	0.09	-0.26
Cx	-12.9107	0.35		1.00	-0.12	0.01	0.03	-0.04	0.97	-0.06
Cy	-48.0199	0.21			1.00	-0.24	0.08	-0.07	-0.10	0.83
K1	-0.00735945	4.3e-05				1.00	-0.87	0.80	0.01	-0.29
K2	0.0211618	0.00018					1.00	-0.98	0.03	0.08
K3	-0.0302538	0.00024						1.00	-0.04	-0.07
P1	-0.000253137	2.1e-05							1.00	-0.06
P2	-0.00272472	9.8e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

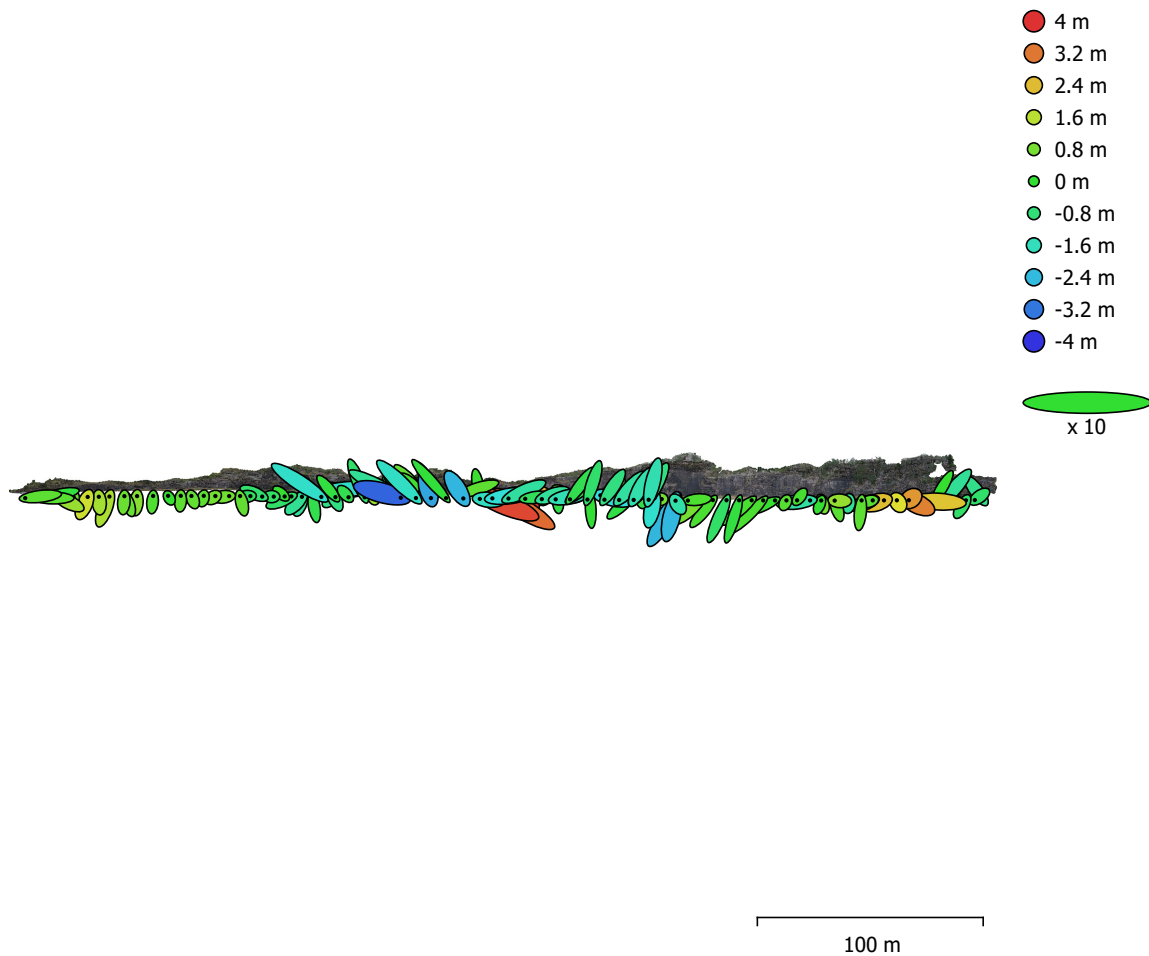


Fig. 3. Camera locations and error estimates.

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)
0.821678	0.738086	1.31753	1.1045	1.71925

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

Digital Elevation Model

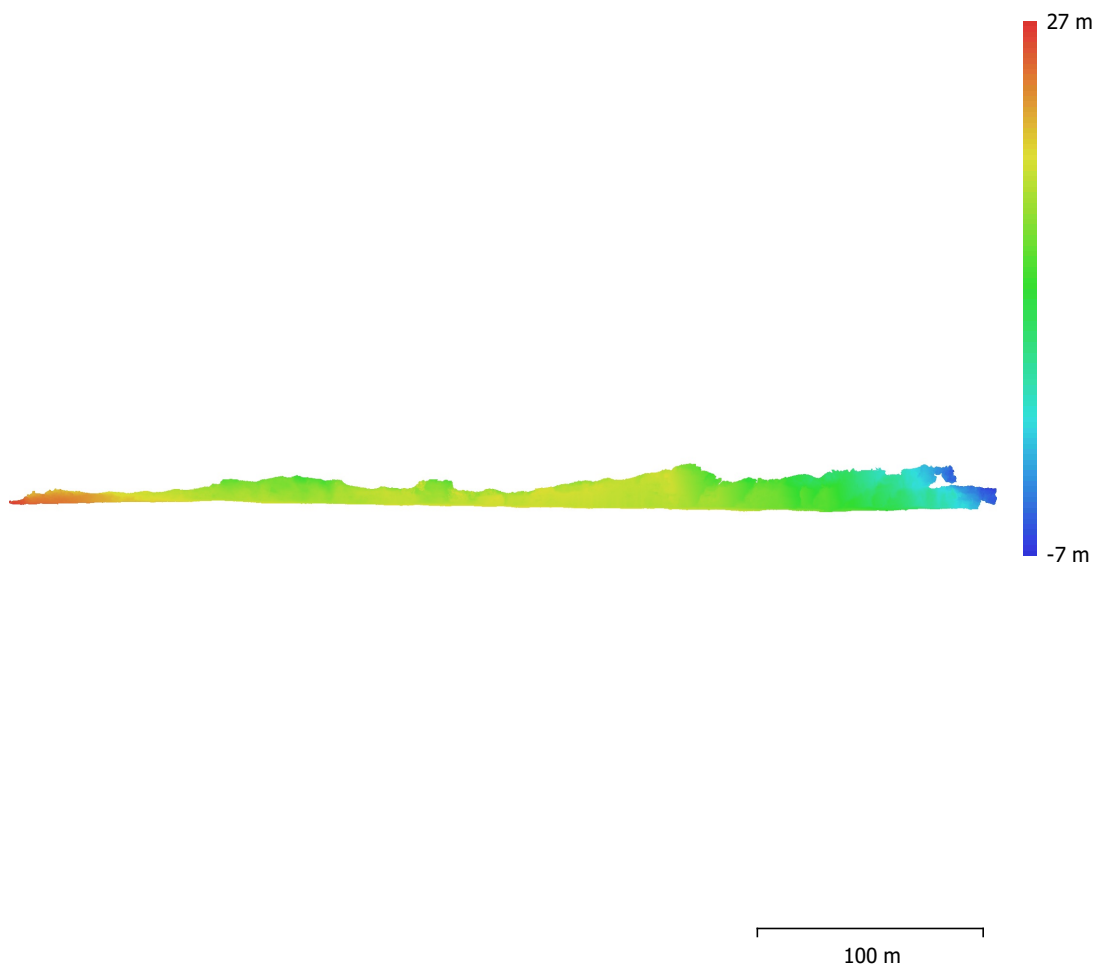


Fig. 4. Reconstructed digital elevation model.

Resolution: 1.72 cm/pix
Point density: 0.339 points/cm²

Processing Parameters

General

Cameras	118
Aligned cameras	118
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	184,690 of 321,953
RMS reprojection error	0.121408 (0.515776 pix)
Max reprojection error	0.356483 (7.82571 pix)
Mean key point size	4.10239 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.79468

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	40,000
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	1 minutes 58 seconds
Matching memory usage	476.58 MB
Alignment time	1 minutes 57 seconds
Alignment memory usage	118.10 MB
Date created	2021:10:27 10:43:54
Software version	1.7.3.12426
File size	18.89 MB

Depth Maps

Count	118
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 12 seconds
Memory usage	1.11 GB
Date created	2021:10:27 10:56:42
Software version	1.7.3.12426
File size	175.23 MB

Dense Point Cloud

Points	30,654,222
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 12 seconds
Memory usage	1.11 GB
Dense cloud generation parameters	
Processing time	2 minutes 12 seconds

Memory usage	3.50 GB
Date created	2021:10:27 10:58:55
Software version	1.7.3.12426
File size	402.03 MB
Model	
Faces	845,278
Vertices	430,010
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096, 4 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Processing time	5 minutes 12 seconds
Memory usage	1.11 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	21 minutes 44 seconds
Memory usage	17.67 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	7 minutes 11 seconds
UV mapping memory usage	2.05 GB
Blending time	42 seconds
Blending memory usage	7.26 GB
Date created	2021:10:27 11:04:01
Software version	1.7.3.12426
File size	66.43 MB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.3 build 12426
OS	Windows 64 bit
RAM	63.91 GB
CPU	Intel(R) Xeon(R) CPU E5-2643 v3 @ 3.40GHz
GPU(s)	Quadro M4000