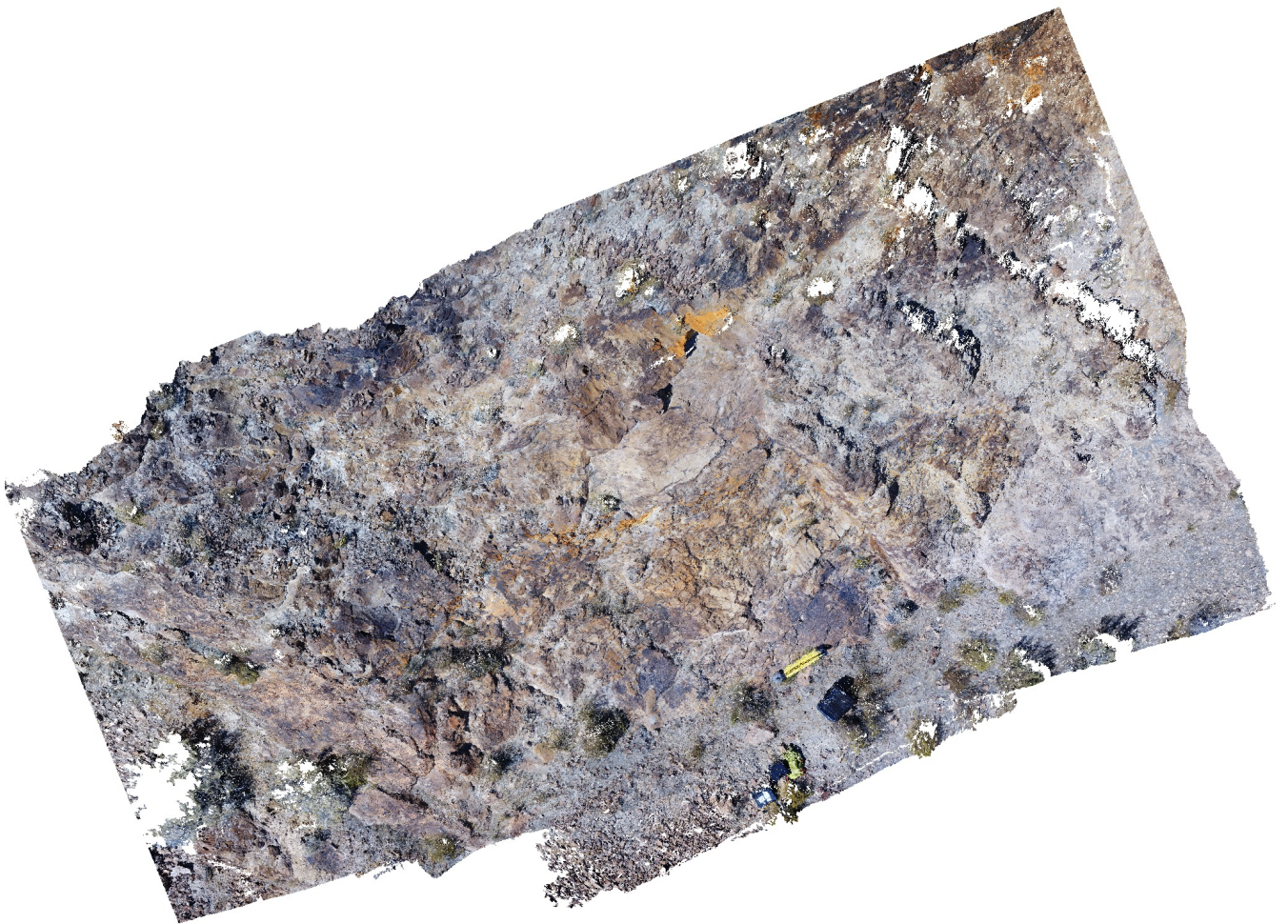


Agisoft PhotoScan

Processing Report
11 February 2019



Survey Data

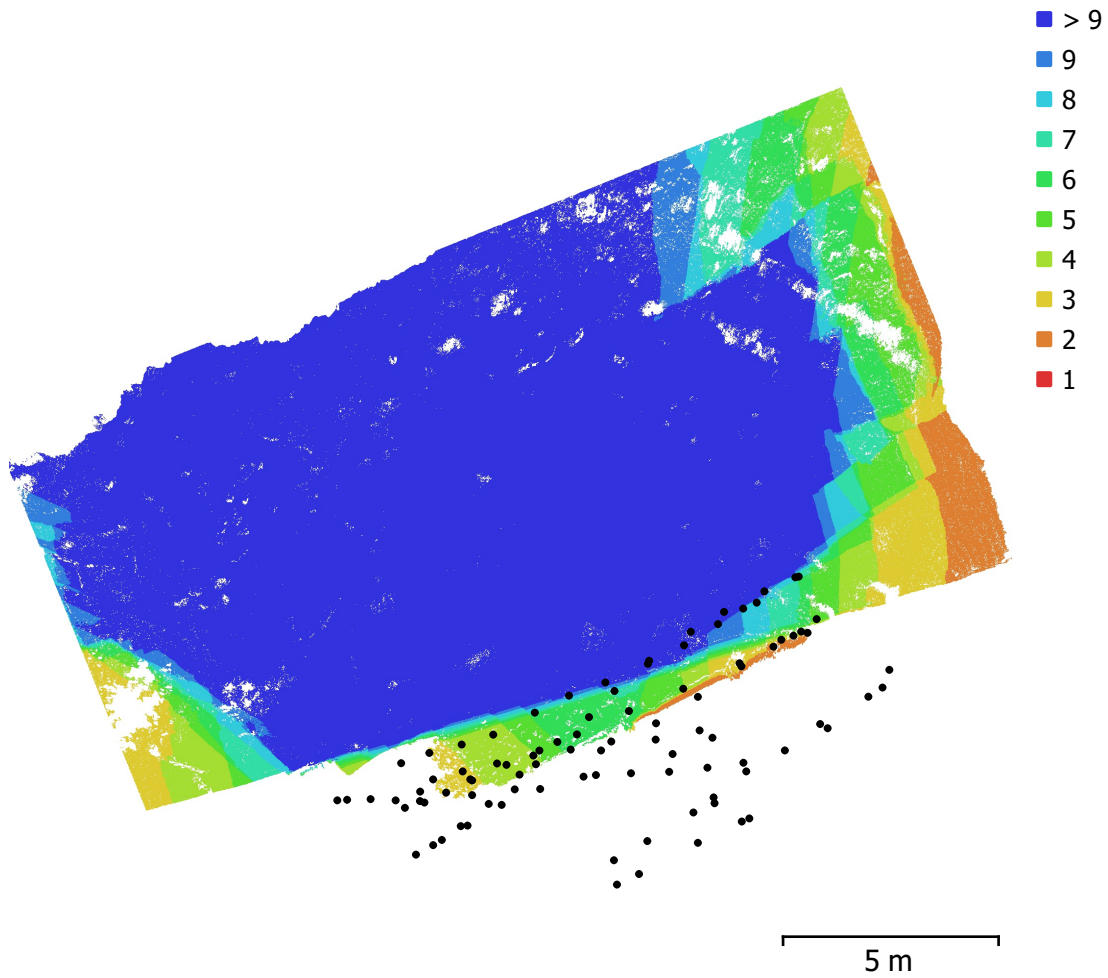


Fig. 1. Camera locations and image overlap.

Number of images:	93	Camera stations:	93
Flying altitude:	6.25 m	Tie points:	62,206
Ground resolution:	1.91 mm/pix	Projections:	377,852
Coverage area:	220 m ²	Reprojection error:	3.53 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC220 (4.7mm)	4000 x 3000	4.7 mm	1.56 x 1.56 μ m	No

Table 1. Cameras.

Camera Calibration

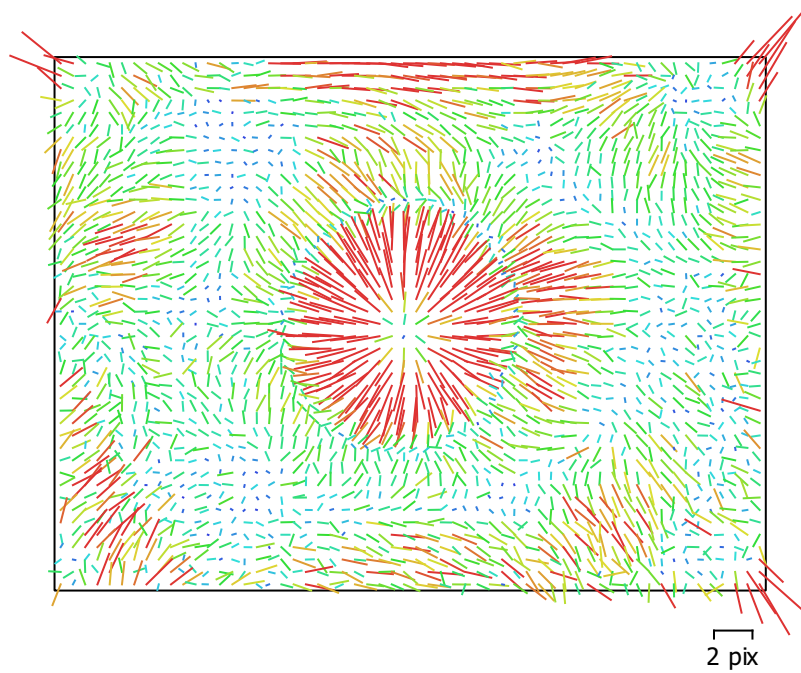


Fig. 2. Image residuals for FC220 (4.7mm).

FC220 (4.7mm)

93 images

Type	Resolution	Focal Length	Pixel Size
Frame	4000 x 3000	4.7 mm	1.56 x 1.56 μm

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	3105.17	0.38	1.00	0.01	-0.22	-0.05	0.04	-0.01	0.01	-0.10
Cx	-48.8464	0.63		1.00	0.00	0.05	-0.07	0.08	0.95	-0.00
Cy	7.24964	0.51			1.00	-0.07	0.05	-0.06	-0.01	0.88
K1	0.03514	0.00027				1.00	-0.96	0.91	0.05	-0.07
K2	-0.112203	0.00099					1.00	-0.98	-0.07	0.05
K3	0.103784	0.0011						1.00	0.08	-0.05
P1	-0.00445814	5e-05							1.00	-0.01
P2	-0.000133743	3.6e-05								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

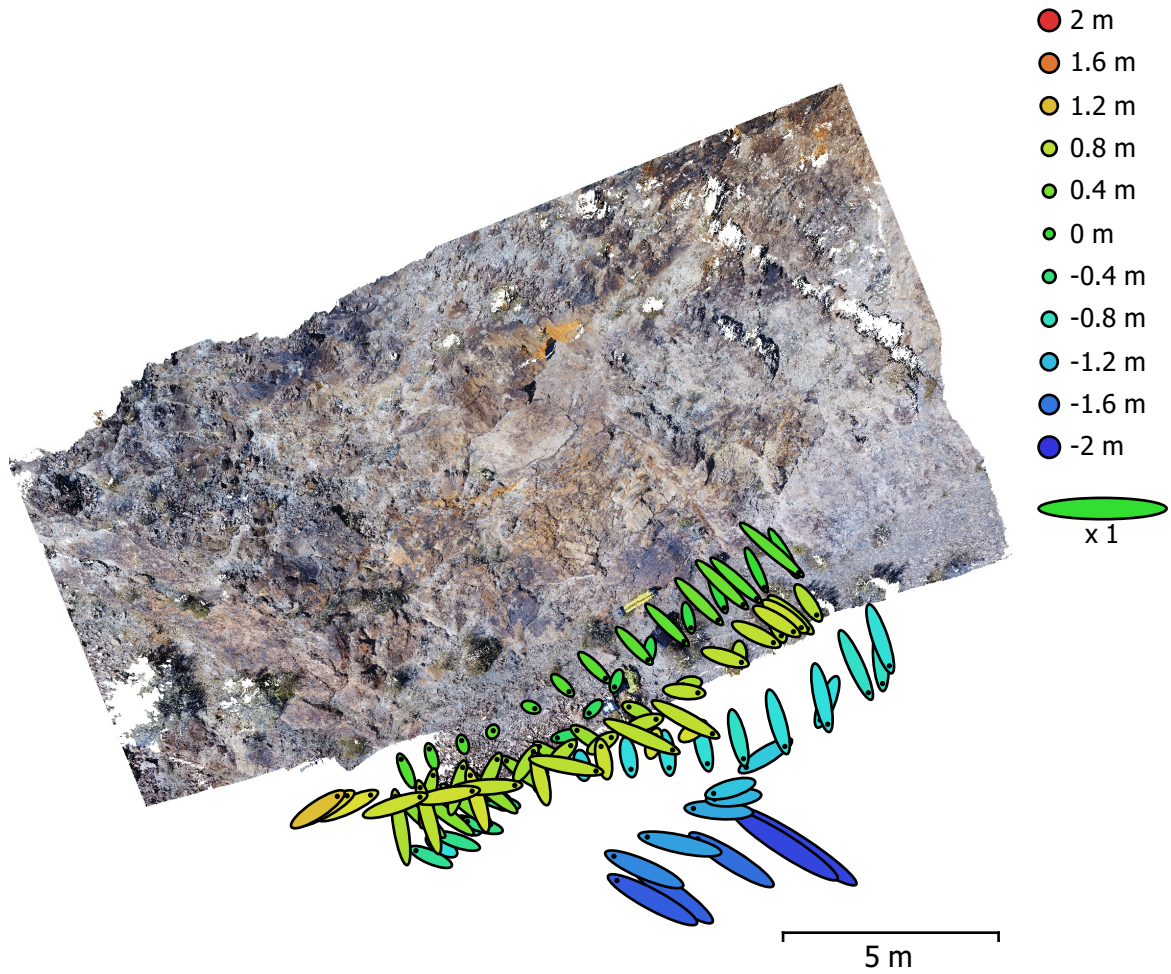


Fig. 3. Camera locations and error estimates.

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)
0.784066	0.675051	0.85008	1.03463	1.33906

Table 3. Average camera location error.

X - Longitude, Y - Latitude, Z - Altitude.

Camera Orientations

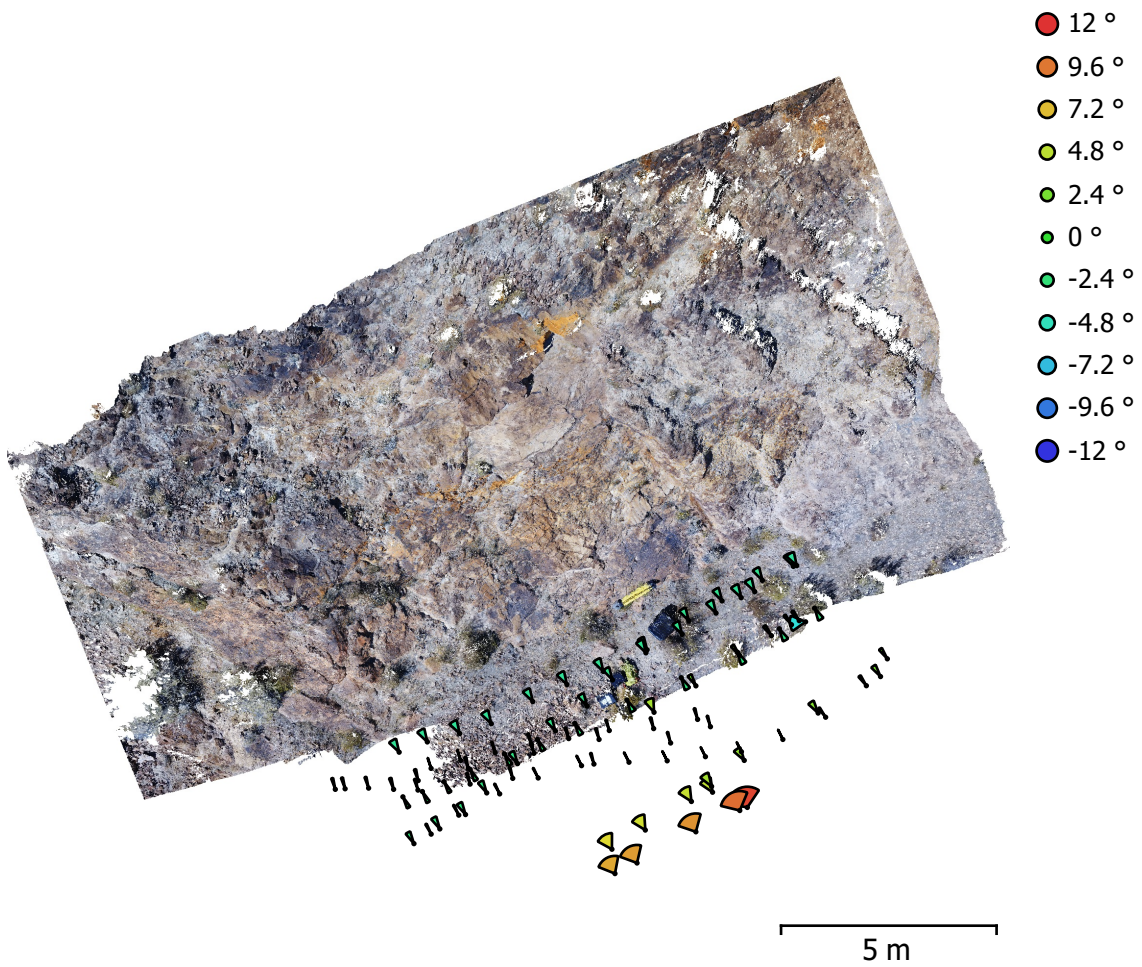


Fig. 4. Camera orientations and error estimates.
Arcs represent yaw error estimates.

Yaw error (°)	Pitch error (°)	Roll error (°)	Total error (°)
3.29068	0.849073	0.837383	3.5001

Table 4. Average camera rotation error.

Digital Elevation Model

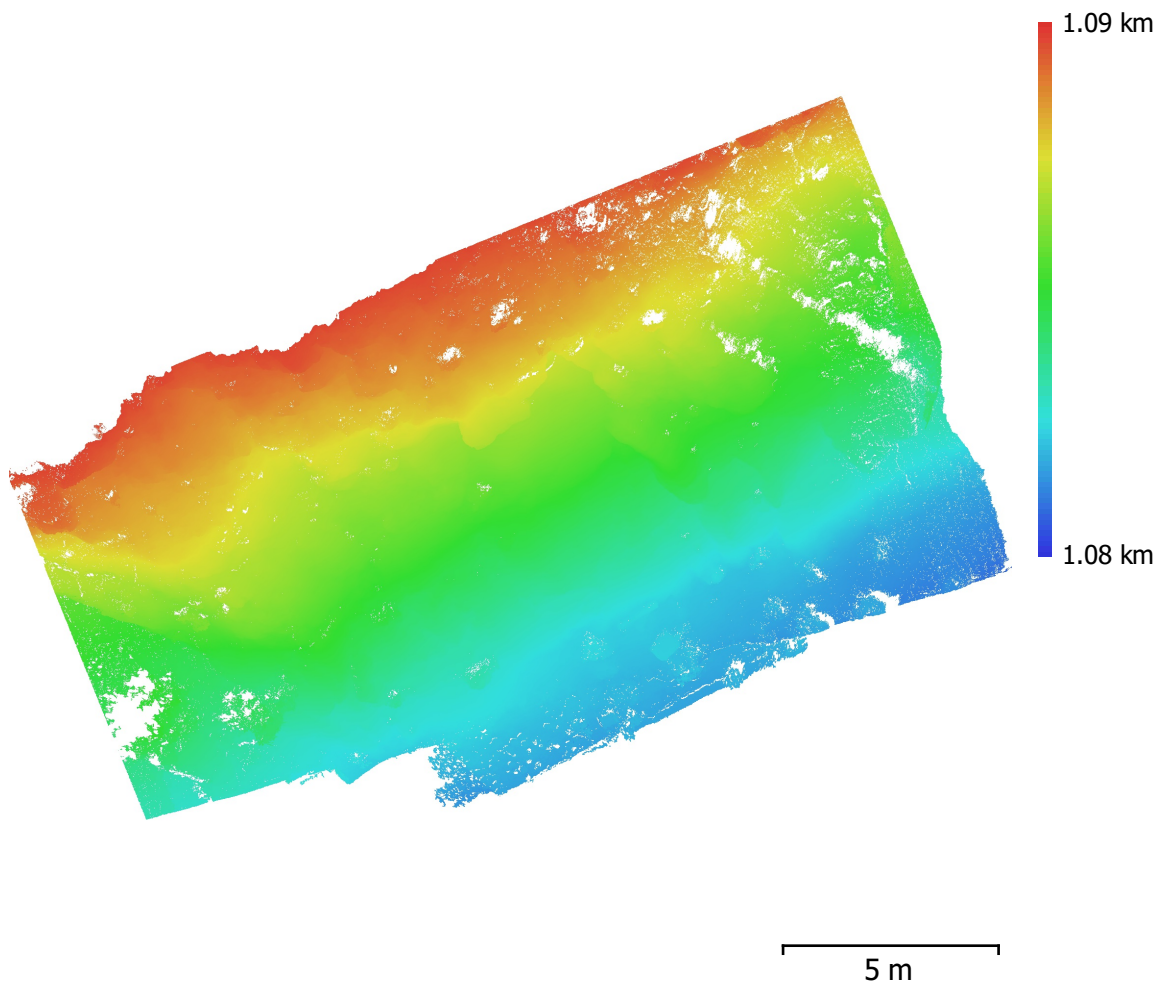


Fig. 5. Reconstructed digital elevation model.

Resolution: unknown

Point density: unknown

Processing Parameters

General

Cameras	93
Aligned cameras	93
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	62,206 of 73,894
RMS reprojection error	1.03662 (3.52599 pix)
Max reprojection error	4.00841 (102.916 pix)
Mean key point size	3.26905 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	6.62364

Alignment parameters

Accuracy	High
Generic preselection	No
Reference preselection	Yes
Key point limit	40,000
Tie point limit	4,000
Adaptive camera model fitting	No
Matching time	5 minutes 8 seconds
Alignment time	2 minutes 5 seconds

Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Adaptive camera model fitting	No
Optimization time	5 seconds

Depth Maps

Count	93
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Reconstruction parameters

Quality	High
Filtering mode	Aggressive
Processing time	25 minutes 57 seconds

Dense Point Cloud

Points	25,785,651
Point colors	3 bands, uint8

Reconstruction parameters

Quality	High
Depth filtering	Aggressive
Depth maps generation time	25 minutes 57 seconds
Dense cloud generation time	37 minutes 57 seconds

Software

Version	1.4.4 build 6848
Platform	Windows 64