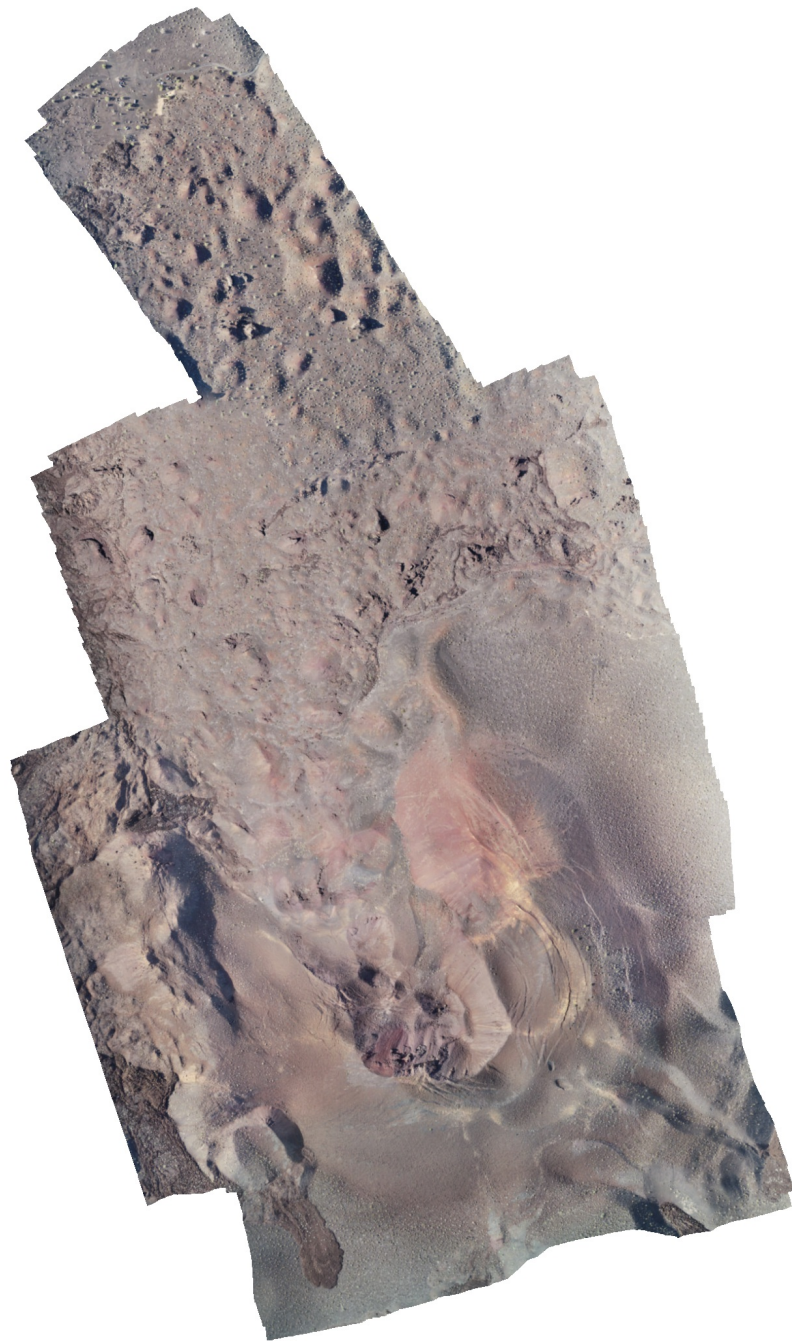


# Agisoft PhotoScan 20180409\_Tecolote\_HighRez\_edifice\_plus\_north

Processing Report  
06 May 2018



# Survey Data

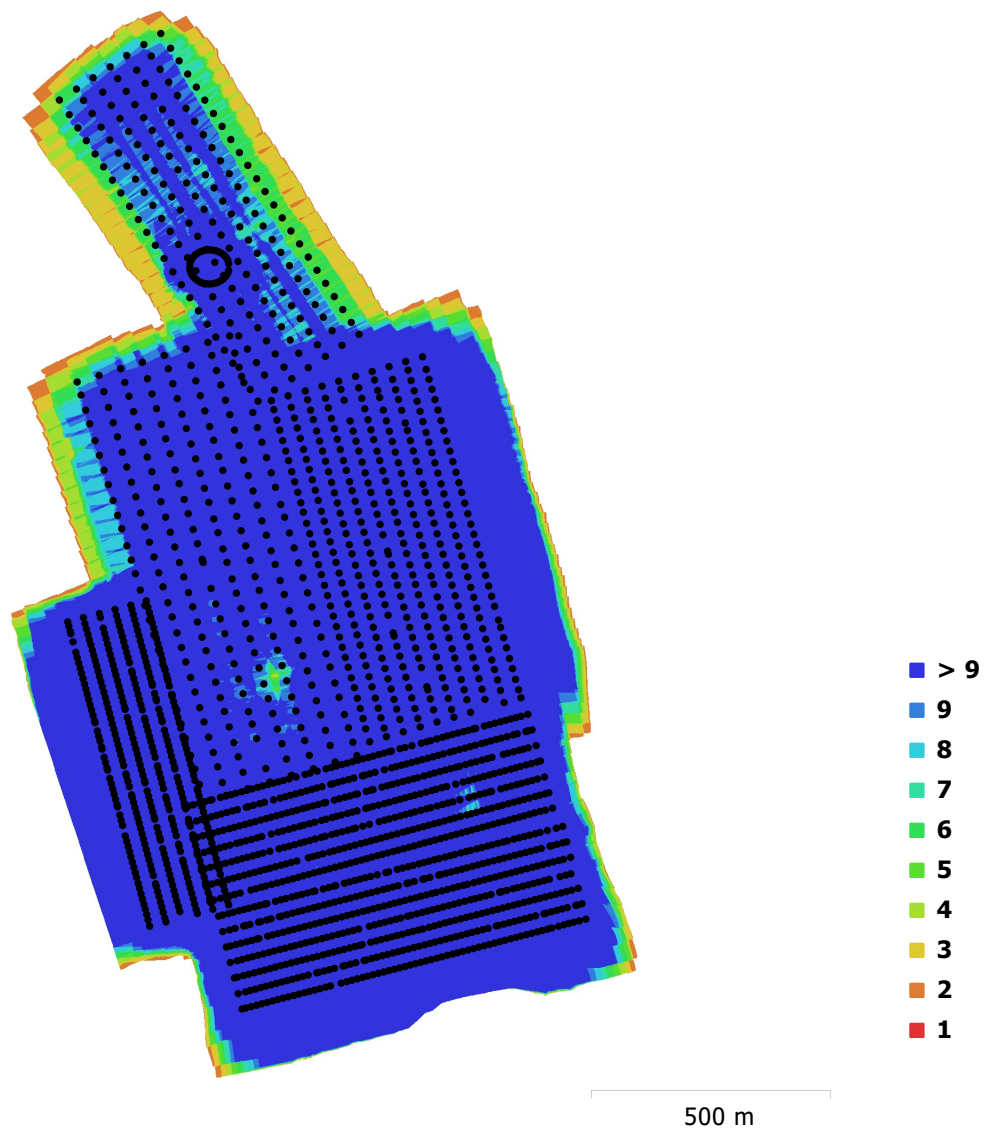


Fig. 1. Camera locations and image overlap.

Number of images:	2,024	Camera stations:	2,024
Flying altitude:	133 m	Tie points:	694,271
Ground resolution:	3.35 cm/pix	Projections:	6,848,577
Coverage area:	1.81 km <sup>2</sup>	Reprojection error:	0.539 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC6310 (8.8 mm)	5472 x 3648	8.8 mm	2.41 x 2.41 $\mu$ m	No

Table 1. Cameras.

# Camera Calibration

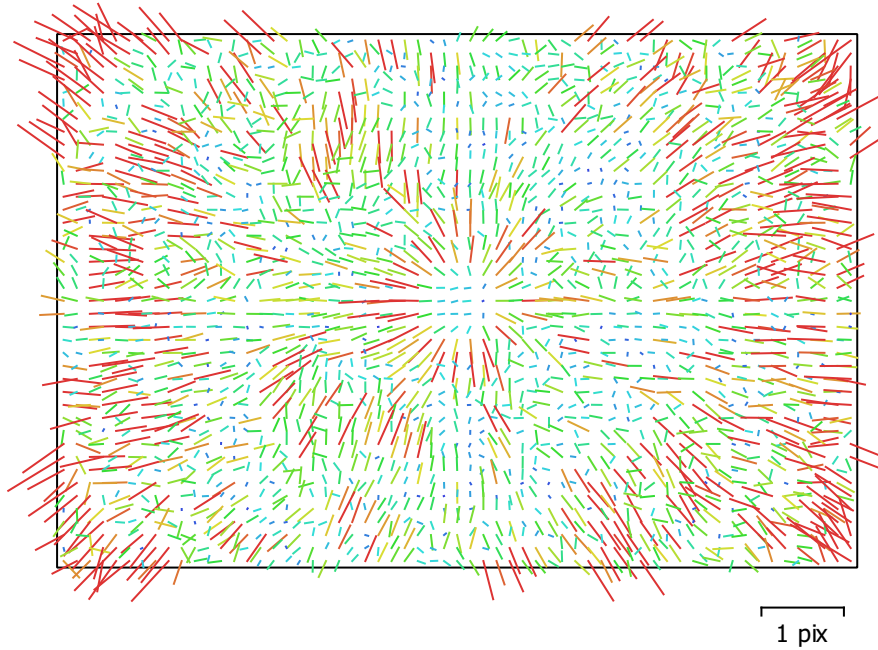


Fig. 2. Image residuals for FC6310 (8.8 mm).

## FC6310 (8.8 mm)

2024 images

Type	Resolution	Focal Length	Pixel Size
<b>Frame</b>	<b>5472 x 3648</b>	<b>8.8 mm</b>	<b>2.41 x 2.41 <math>\mu\text{m}</math></b>

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
<b>B1</b>	<b>-0.206864</b>									
<b>B2</b>	<b>0.37546</b>									
<b>K4</b>	<b>-0.0638605</b>									
<b>F</b>	<b>3663.07</b>	0.054	1.00	0.49	-0.12	-0.15	0.20	-0.20	0.01	-0.03
<b>Cx</b>	<b>-13.027</b>	0.0052		1.00	-0.05	-0.06	0.08	-0.08	0.65	-0.01
<b>Cy</b>	<b>5.95843</b>	0.0036			1.00	0.01	-0.02	0.02	0.01	0.61
<b>K1</b>	<b>0.00874261</b>	6.6e-06				1.00	-0.84	0.79	0.11	-0.01
<b>K2</b>	<b>-0.0541945</b>	1.7e-05					1.00	-0.99	0.00	-0.01
<b>K3</b>	<b>0.103518</b>	1.5e-05						1.00	-0.00	0.01
<b>P1</b>	<b>5.45253e-05</b>	4e-07							1.00	-0.01
<b>P2</b>	<b>-0.000211029</b>	2.9e-07								1.00

Table 2. Calibration coefficients and correlation matrix.

# Camera Locations

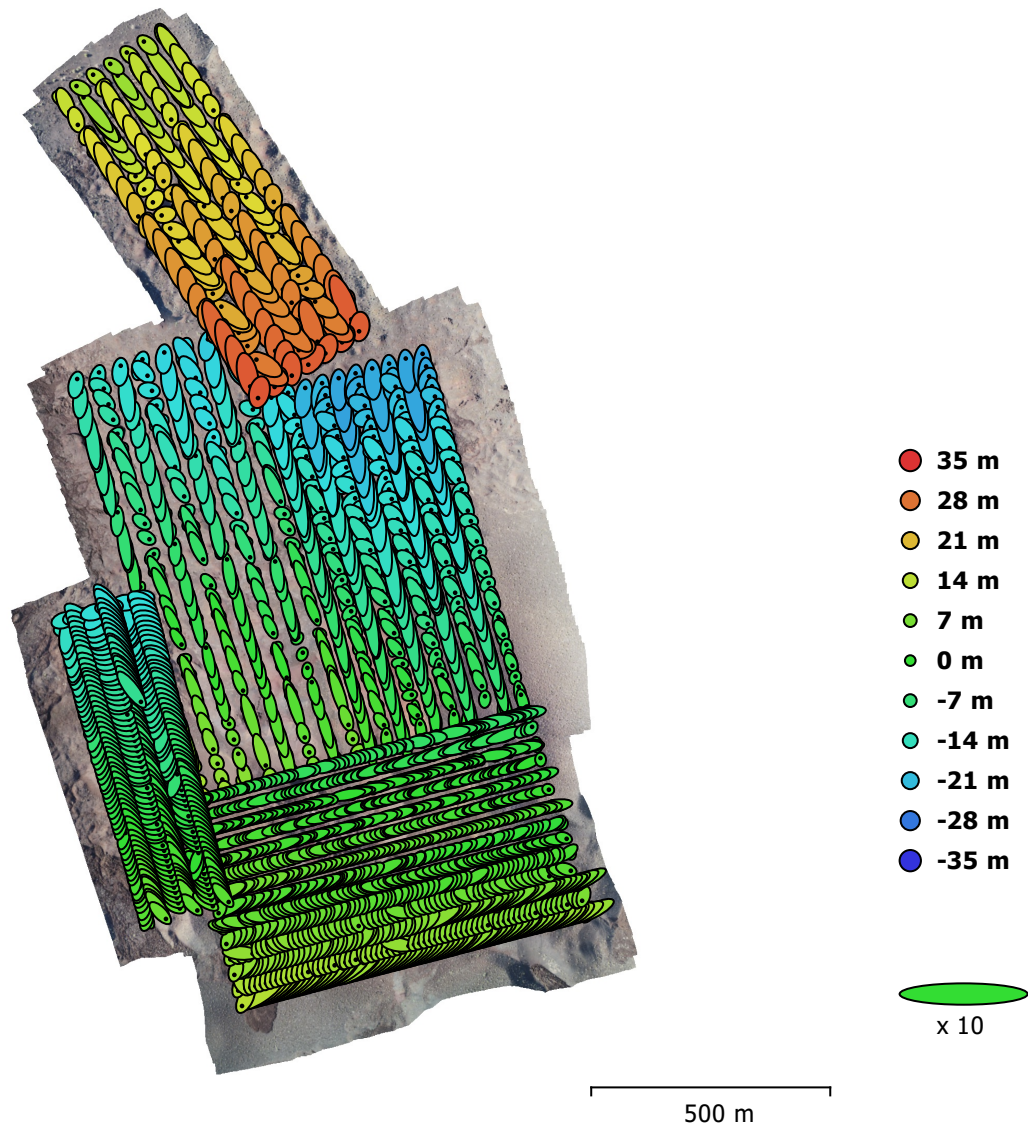


Fig. 3. Camera locations and error estimates.

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 (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
2.3523	3.27193	10.9255	4.02974	11.645

Table 3. Average camera location error.

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

# Digital Elevation Model

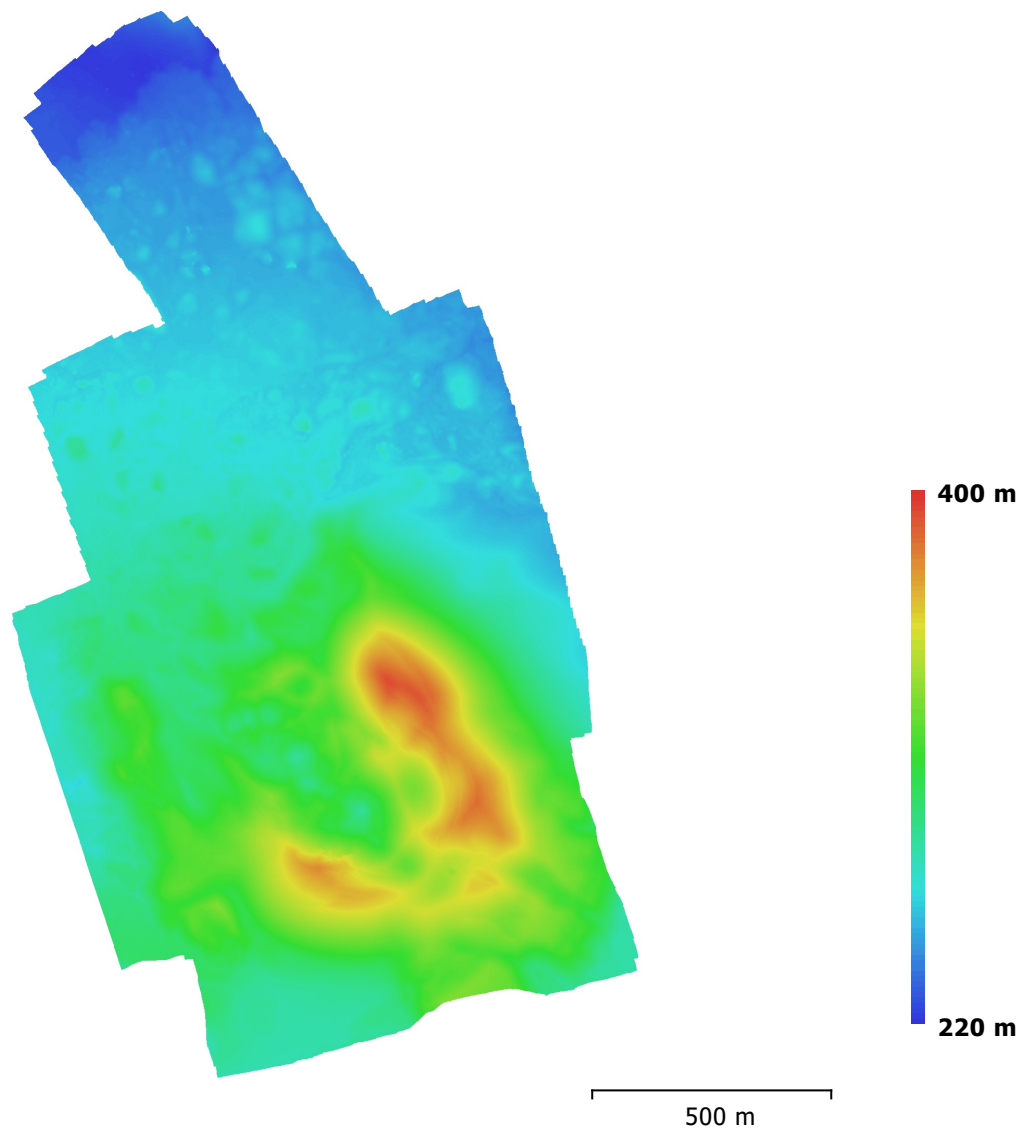


Fig. 4. Reconstructed digital elevation model.

Resolution: 6.69 cm/pix  
Point density: 223 points/m<sup>2</sup>

# Processing Parameters

## General

Cameras	2024
Aligned cameras	2024
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

## Point Cloud

Points	694,271 of 786,683
RMS reprojection error	0.211023 (0.539165 pix)
Max reprojection error	0.927127 (29.0434 pix)
Mean key point size	2.50253 pix
Effective overlap	11.9145

### Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Yes
Key point limit	40,000
Tie point limit	4,000
Adaptive camera model fitting	Yes
Matching time	4 hours 19 minutes
Alignment time	20 minutes 15 seconds

### Optimization parameters

Parameters	f, cx, cy, k1-k3, p1, p2
Fit rolling shutter	No
Optimization time	50 seconds

## Dense Point Cloud

Points	562,821,095
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### Reconstruction parameters

Quality	High
Depth filtering	Mild
Depth maps generation time	8 days 18 hours
Dense cloud generation time	4 days 13 hours

## Model

Faces	112,004,430
Vertices	56,020,326
Texture	4,096 x 4,096, uint8

### Reconstruction parameters

Surface type	Height field
Source data	Dense
Interpolation	Enabled
Quality	High
Depth filtering	Mild
Face count	112,564,142
Processing time	53 minutes 43 seconds

### Texturing parameters

Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096 x 4,096
Enable color correction	No
Enable hole filling	Yes
UV mapping time	30 minutes 22 seconds
Blending time	4 hours 15 minutes

## DEM

Size	28,247 x 41,366
Coordinate system	WGS 84 (EPSG::4326)

### Reconstruction parameters

Source data	Dense cloud
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Interpolation	Enabled
Processing time	10 minutes 47 seconds
<b>Orthomosaic</b>	
Size	39,312 x 66,706
Coordinate system	WGS 84 (EPSG::4326)
Channels	3, uint8
<b>Reconstruction parameters</b>	
Blending mode	Mosaic
Surface	Mesh
Enable color correction	No
Enable hole filling	Yes
Processing time	18 hours 48 minutes
<b>Software</b>	
Version	1.3.2 build 4205
Platform	Windows 64