

Balcón del Cerro

Reporte de procesamiento

09 August 2024



Survey Data

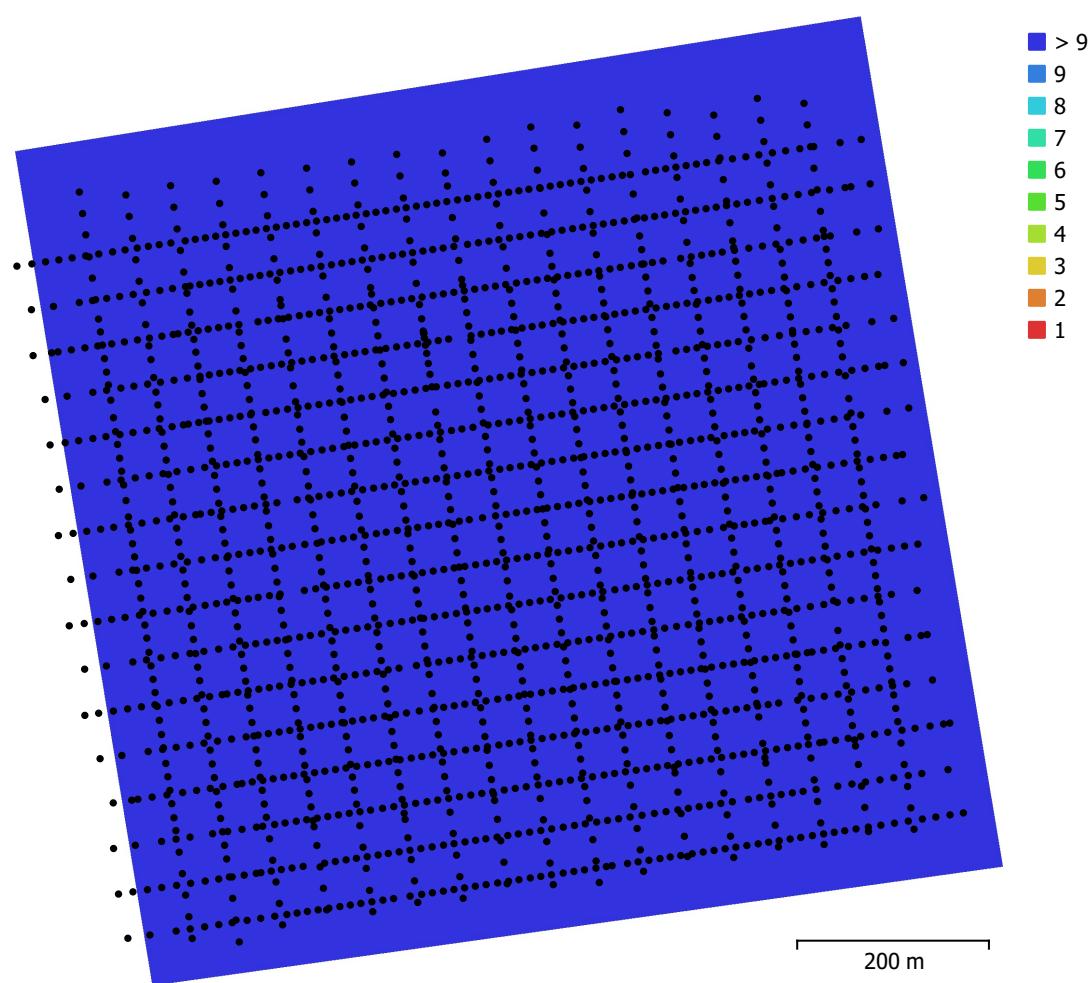


Fig. 1. Camera locations and image overlap.

Number of images:	1,984	Camera stations:	1,984
Flying altitude:	142 m	Tie points:	684,510
Ground resolution:	4.61 cm/pix	Projections:	5,778,557
Coverage area:	0.795 km ²	Reprojection error:	1.36 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

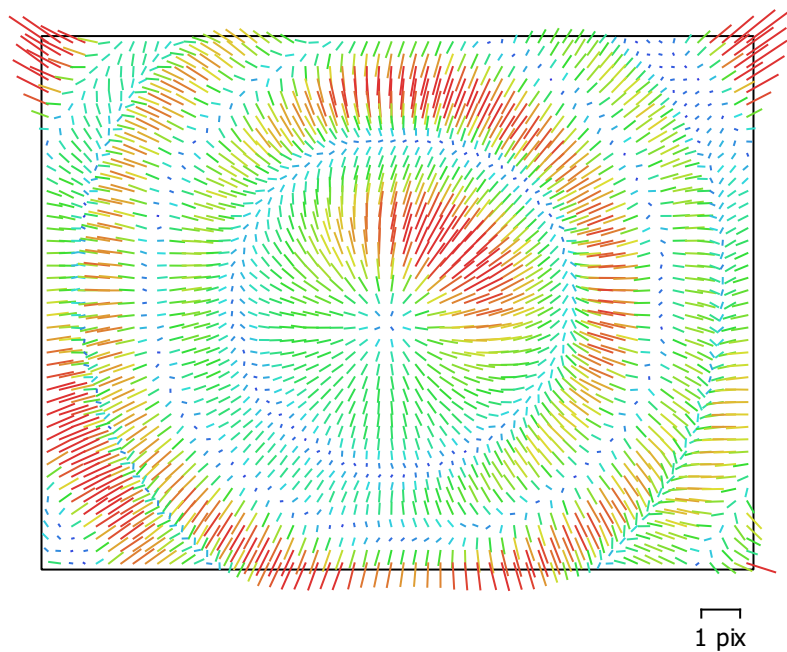


Fig. 2. Image residuals for M3E (12.29mm).

M3E (12.29mm)

1984 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	3709.61	0.0045	1.00	-0.00	0.00	-0.68	0.62	-0.56	0.01	0.02
Cx	23.2375	0.0052		1.00	-0.01	0.01	-0.01	0.02	0.77	-0.00
Cy	-63.6992	0.0046			1.00	-0.02	0.02	-0.03	-0.01	0.55
K1	-0.105714	7.7e-06				1.00	-0.97	0.92	0.00	-0.03
K2	-0.000200471	2e-05					1.00	-0.98	-0.00	0.04
K3	-0.0174988	1.5e-05						1.00	0.01	-0.05
P1	-3.28766e-05	2.7e-07							1.00	-0.00
P2	-0.00023806	2.7e-07								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

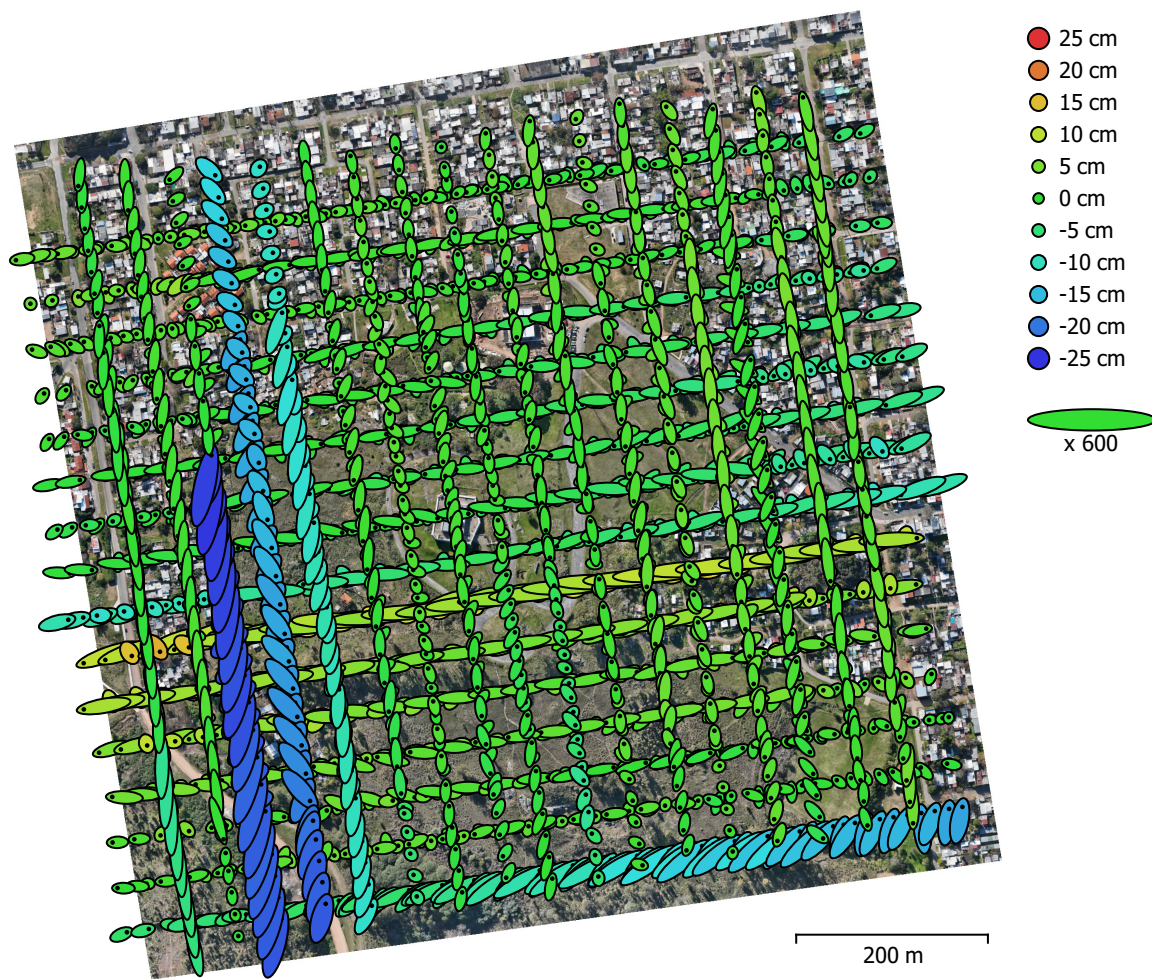


Fig. 3. Camera locations and error estimates.

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)
2.64413	2.43054	5.96612	3.59151	6.96373

Table 3. Average camera location error.

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

Digital Elevation Model

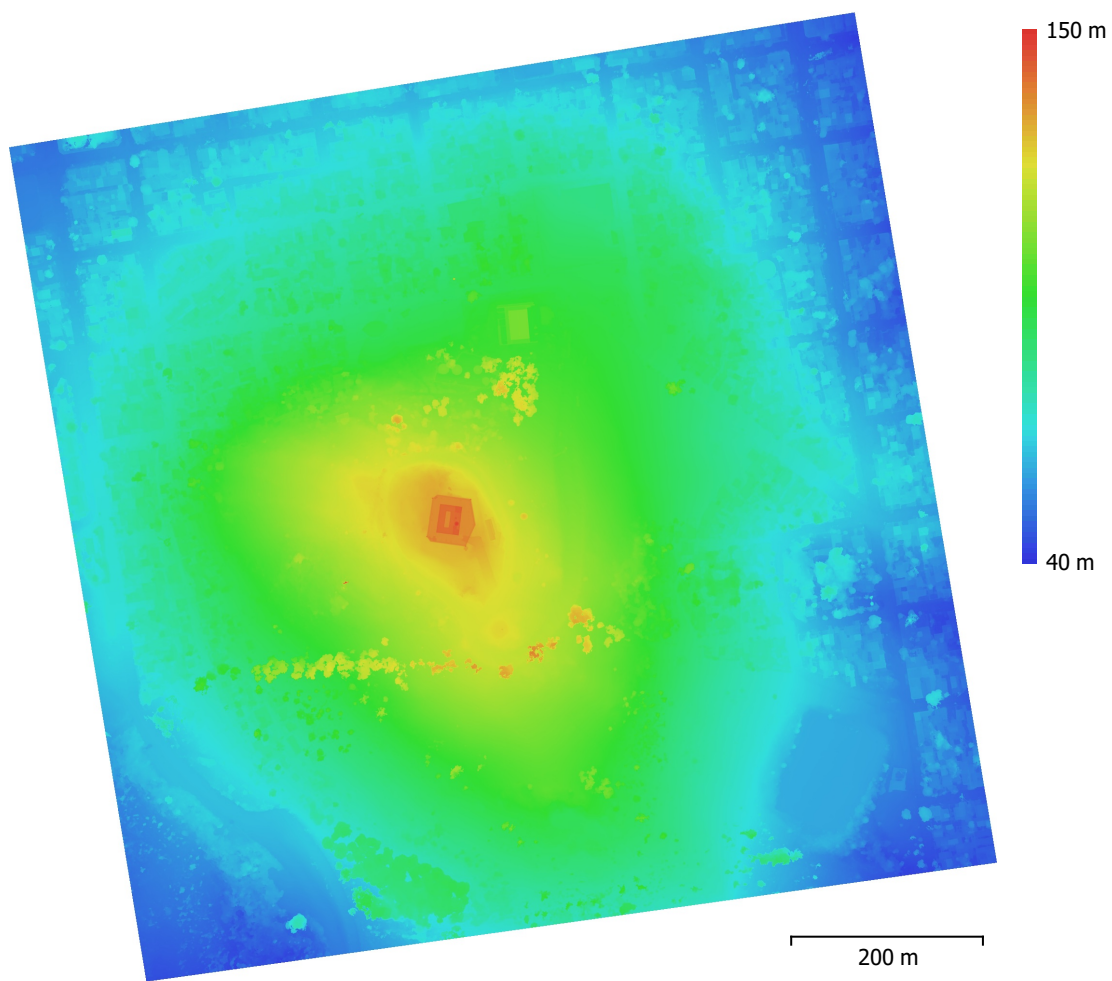


Fig. 4. Reconstructed digital elevation model.

Resolution: 9.23 cm/pix
Point density: 117 points/m²

Processing Parameters

General

Cameras	1984
Aligned cameras	1984
Shapes	
Point	2
Polygon	1
Coordinate system	WGS 84 / UTM zone 21S EGM08
Rotation angles	Yaw, Pitch, Roll

Tie Points

Points	684,510 of 800,006
RMS reprojection error	0.278249 (1.35921 pix)
Max reprojection error	0.838399 (83.5897 pix)
Mean key point size	3.68903 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	10.9214

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	4,000
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	No
Matching time	18 minutes 19 seconds
Matching memory usage	3.74 GB
Alignment time	18 minutes 0 seconds
Alignment memory usage	6.33 GB
Date created	2024:07:31 10:00:11
Software version	2.1.2.18548
File size	151.53 MB

Depth Maps

Count	1984
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Max neighbors	16
Processing time	3 hours 34 minutes
Memory usage	8.52 GB
Date created	2024:08:01 10:41:18
Software version	2.1.2.18548
File size	15.73 GB

Point Cloud

Points	381,080,328
Coordinate precision	2.31 cm

Point attributes

Color	3 bands, uint8
Normal	

Point classes	
Created (never classified)	266,215,561
Ground	110,012,889
Low Point (noise)	4,851,878
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Max neighbors	16
Processing time	3 hours 34 minutes
Memory usage	8.52 GB
Point cloud generation parameters	
Processing time	9 hours 59 minutes
Memory usage	26.08 GB
Ground points classification parameters	
Max angle (°)	20
Max terrain slope (deg)	5
Max distance (m)	0.2
Cell size (m)	10
Classification time	28 minutes 44 seconds
Classification memory usage	16.58 GB
Date created	2024:08:01 20:40:18
Software version	2.1.2.18548
File size	5.01 GB
Tiled Model	
Texture	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Max neighbors	16
Processing time	3 hours 34 minutes
Memory usage	8.52 GB
Reconstruction parameters	
Source data	Depth maps
Tile size	256
Face count	High
Enable ghosting filter	No
Processing time	7 hours 43 minutes
Memory usage	19.73 GB
Date created	2024:08:02 14:31:21
Software version	2.1.2.18548
File size	1.85 GB
DEM	
Size	19,766 x 20,359
Coordinate system	WGS 84 / UTM zone 21S EGM08
Reconstruction parameters	
Source data	Point cloud
Interpolation	Enabled
Processing time	12 minutes 22 seconds
Memory usage	323.94 MB
Date created	2024:08:01 20:56:31
Software version	2.1.2.18548
File size	1.59 GB
Orthomosaic	
Size	39,531 x 40,717
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	5 hours 57 minutes
Memory usage	22.23 GB
Date created	2024:08:01 22:09:57
Software version	2.1.2.18548
File size	33.48 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) Radeon(TM) RX 460 Graphics (Baffin)