Agisoft Metashape

Processing Report

03 June 2024

Survey Data

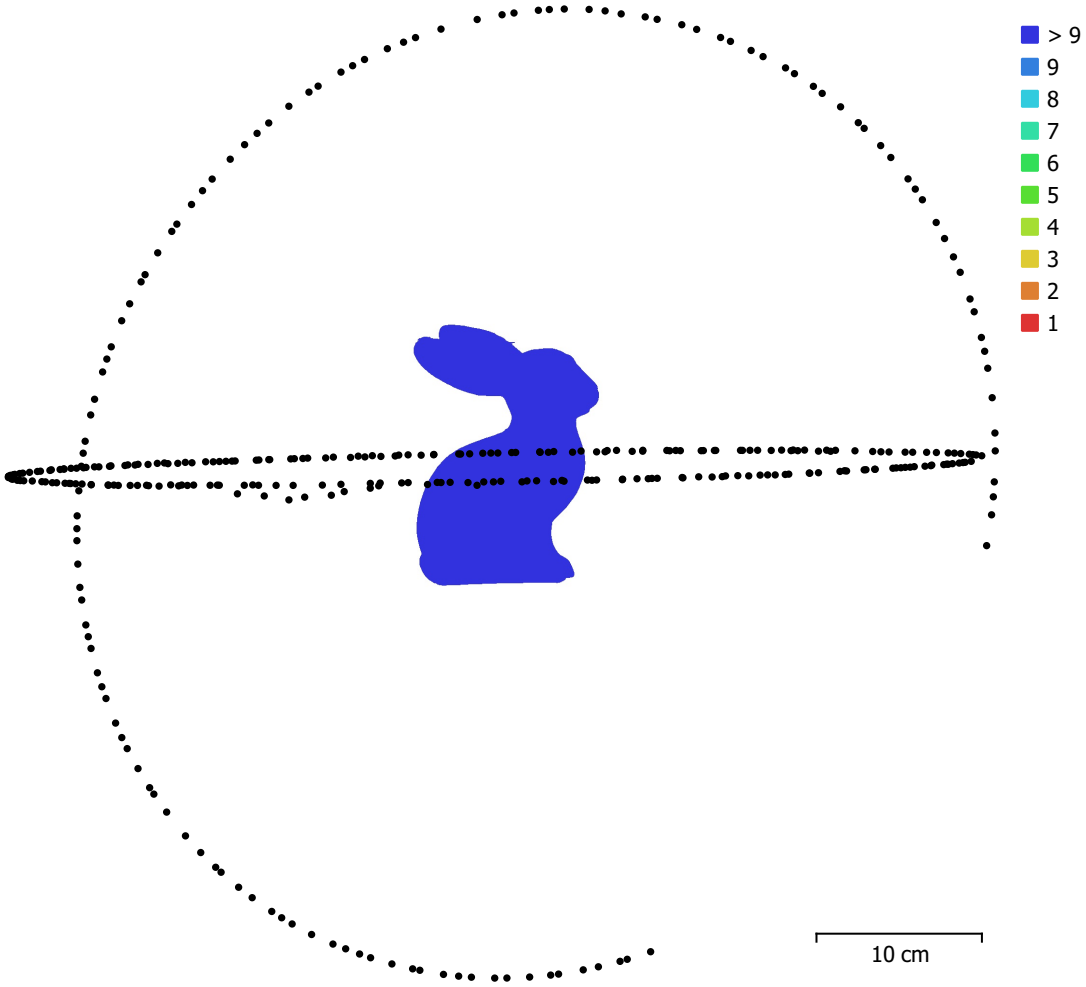

Fig. 1. Camera locations and image overlap.

Number of images:	366	Camera stations:	366
Flying altitude:	25.2 cm	Tie points:	194,249
Ground resolution:	0.113 mm/pix	Projections:	1,050,217
Coverage area:	119 cm²	Reprojection error:	0.452 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
Canon EOS 800D, EF-S1...	6000 x 4000	18 mm	3.72 x 3.72 µm	No

Table 1. Cameras.

Camera Calibration

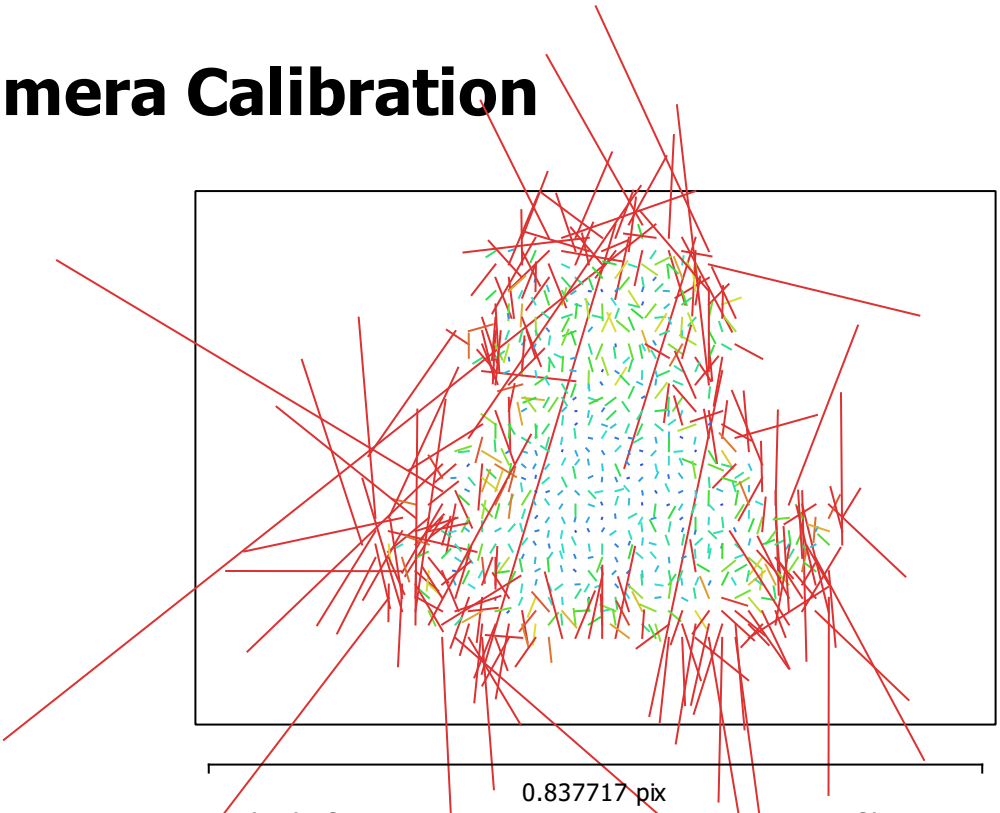

Fig. 2. Image residuals for Canon EOS 800D, EF-S18-55mm f/4-5.6 IS STM (18mm).

Canon EOS 800D, EF-S18-55mm f/4-5.6 IS STM (18mm)

366 images

Type	Resolution	Focal Length	Pixel Size
Frame	**6000 x 4000**	**18 mm**	**3.72 x 3.72 µm**

	Value	Error	F	B2	P1	P2
F	**4683.94**	0.24	1.00	0.14	-0.05	-0.05
B2	**1.11135**	0.074		1.00	-0.28	0.15
P1	**0.00432416**	1.9e-05			1.00	-0.06
P2	**0.00263313**	3e-05				1.00

Table 2. Calibration coefficients and correlation matrix.

Ground Control Points

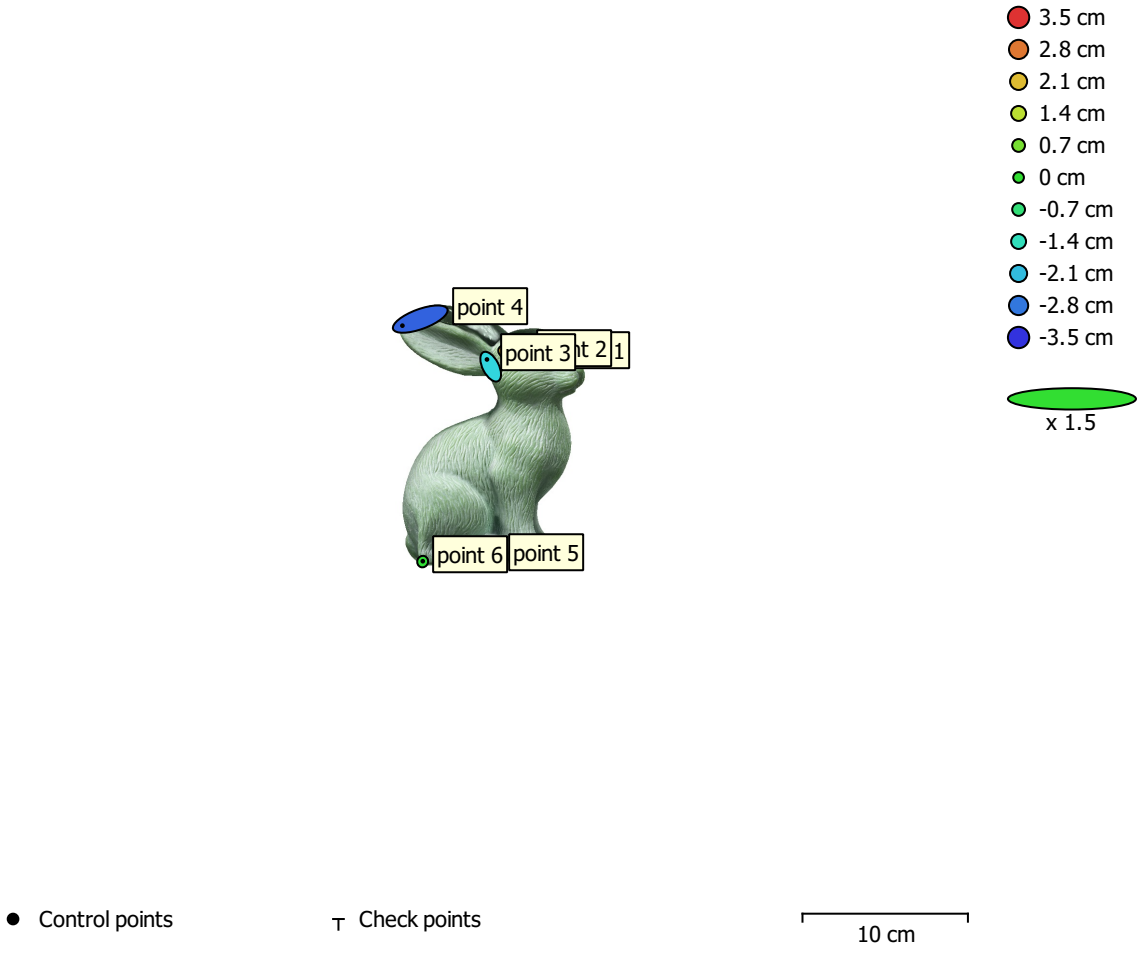

Fig. 3. GCP locations and error estimates.
Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.
Estimated GCP locations are marked with a dot or crossing.

Count	X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
6	0.78723	0.326882	2.00579	0.852398	2.17939

Table 3. Control points RMSE.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
point 1	1.08344	0.0801965	2.53126	2.75455	0.482 (130)
point 2	0.621301	-0.129176	2.30889	2.39451	0.400 (116)
point 3	-0.299517	0.580358	-1.82528	1.9386	0.406 (112)
point 4	-1.43822	-0.527931	-3.01109	3.37844	0.247 (204)
point 5	0.0151231	0.0390337	0.0157891	0.0447397	0.238 (155)
point 6	0.010849	0.0307236	-0.0466787	0.0569258	0.159 (198)
Total	**0.78723**	**0.326882**	**2.00579**	**2.17939**	**0.320**

Table 4. Control points.

Scale Bars

Label	Distance (m)	Error (m)
point 1_point 2	0.0111573	-0.00384273
point 3_point 4	0.0582494	0.00324941
point 5_point 6	0.0474123	0.00741232
Total		**0.00517261**

Table 5. Control scale bars.

Digital Elevation Model

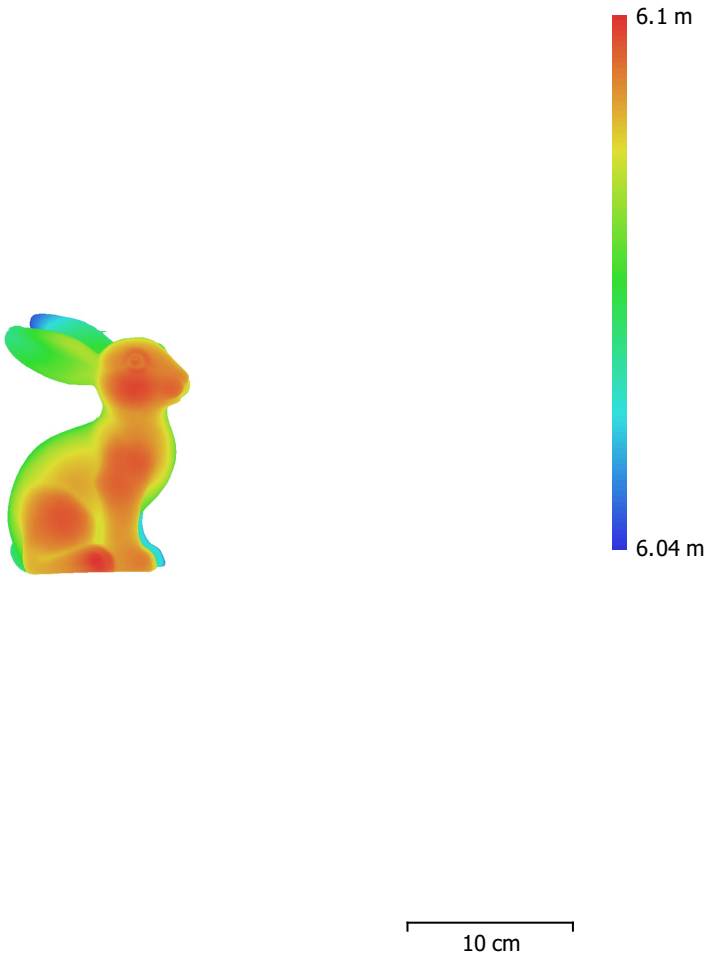

Fig. 4. Reconstructed digital elevation model.

Resolution:	1.11 mm/pix
Point density:	81.8 points/cm²

Processing Parameters

General	
Cameras	366
Aligned cameras	366
Markers	6
Scale bars	3
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll
Tie Points	
Points	194,249 of 2,517,502
RMS reprojection error	0.219675 (0.45164 pix)
Max reprojection error	0.648008 (7.01933 pix)
Mean key point size	2.01618 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	3.49842
Alignment parameters	
Accuracy	Highest
Generic preselection	Yes
Reference preselection	No
Key point limit	100,000
Key point limit per Mpx	1,000
Tie point limit	0
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	11 minutes 15 seconds
Matching memory usage	6.72 GB
Alignment time	5 minutes 0 seconds
Alignment memory usage	3.66 GB
Optimization parameters	
Parameters	f, b2, p1, p2
Adaptive camera model fitting	Yes
Optimization time	4 seconds
Date created	2024:04:12 17:35:19
Software version	2.1.1.17821
File size	146.09 MB
Depth Maps	
Count	366
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Aggressive
Max neighbors	16
Processing time	32 minutes 30 seconds
Memory usage	17.33 GB
Date created	2024:04:12 21:10:47
Software version	2.1.1.17821
File size	1.63 GB
Point Cloud	
Points	3,167,737
Coordinate precision	0.0283 mm

Point attributes	
Color	3 bands, uint8
Normal	
Point classes	
Created (never classified)	3,167,737
Point cloud generation parameters	
Processing time	18 minutes 32 seconds
Memory usage	14.66 GB
Date created	2024:04:12 19:48:22
Software version	2.1.1.17821
File size	42.18 MB
Model	
Faces	50,000
Vertices	25,002
Vertex colors	3 bands, uint8
Texture	8,192 x 8,192, 4 bands, uint8
Depth maps generation parameters	
Quality	Ultra High
Filtering mode	Aggressive
Max neighbors	16
Processing time	32 minutes 30 seconds
Memory usage	17.33 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	9 minutes 44 seconds
Memory usage	15.47 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	8,192
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	12 seconds
UV mapping memory usage	88.12 MB
Blending time	28 seconds
Blending memory usage	2.97 GB
Blending GPU memory usage	2.22 GB
Date created	2024:04:12 21:20:15
Software version	2.1.1.17821
File size	57.88 MB
System	
Software name	Agisoft Metashape Professional
Software version	2.1.1 build 17821
OS	Windows 64 bit
RAM	31.69 GB
CPU	13th Gen Intel(R) Core(TM) i7-13700K
GPU(s)	NVIDIA GeForce RTX 4080