

Agisoft Metashape

Processing Report

19 May 2020



Survey Data

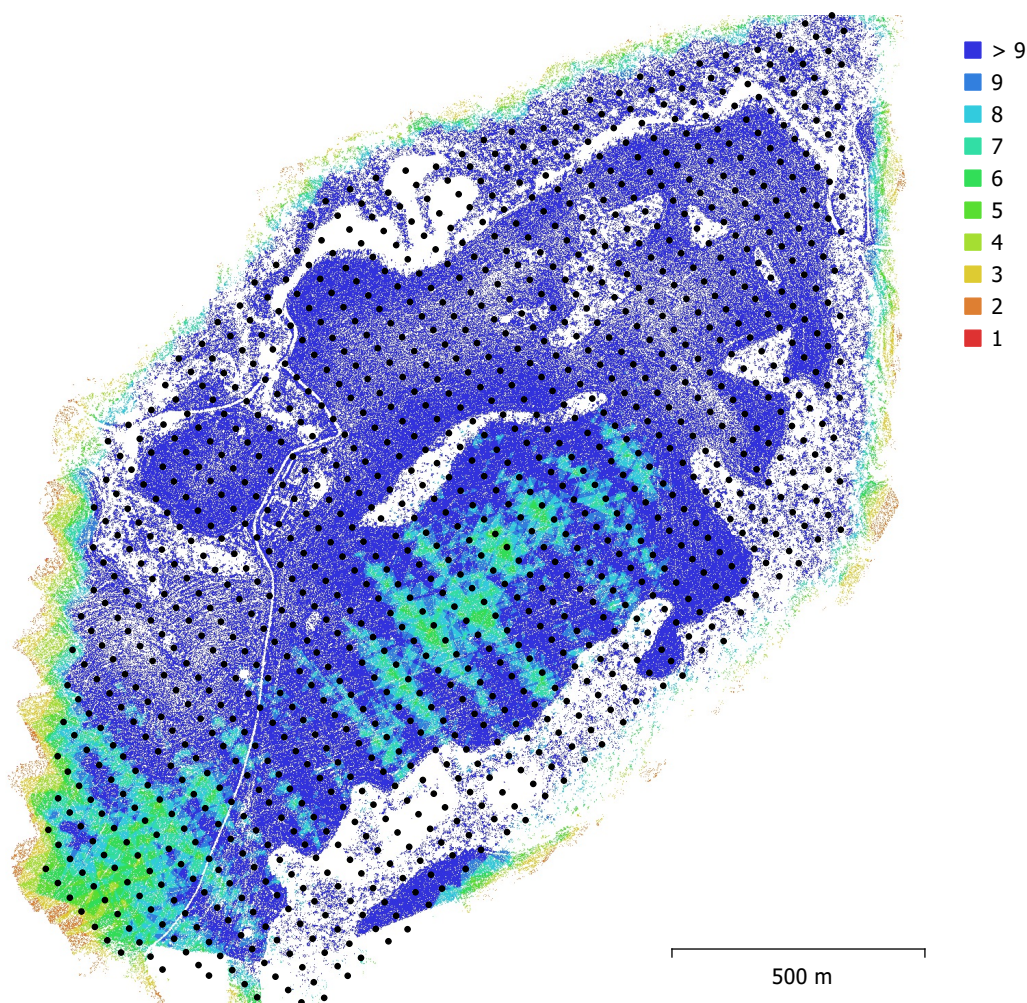


Fig. 1. Camera locations and image overlap.

Number of images:	1,054	Camera stations:	1,054
Flying altitude:	154 m	Tie points:	2,086,320
Ground resolution:	3.8 cm/pix	Projections:	7,067,804
Coverage area:	1.35 km^2	Reprojection error:	0.621 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
ILCE-6000, E 16mm F2.8 (16mm)	6000 x 4000	16 mm	4 x 4 um	Não

Table 1. Cameras.

Calibração da Câmara

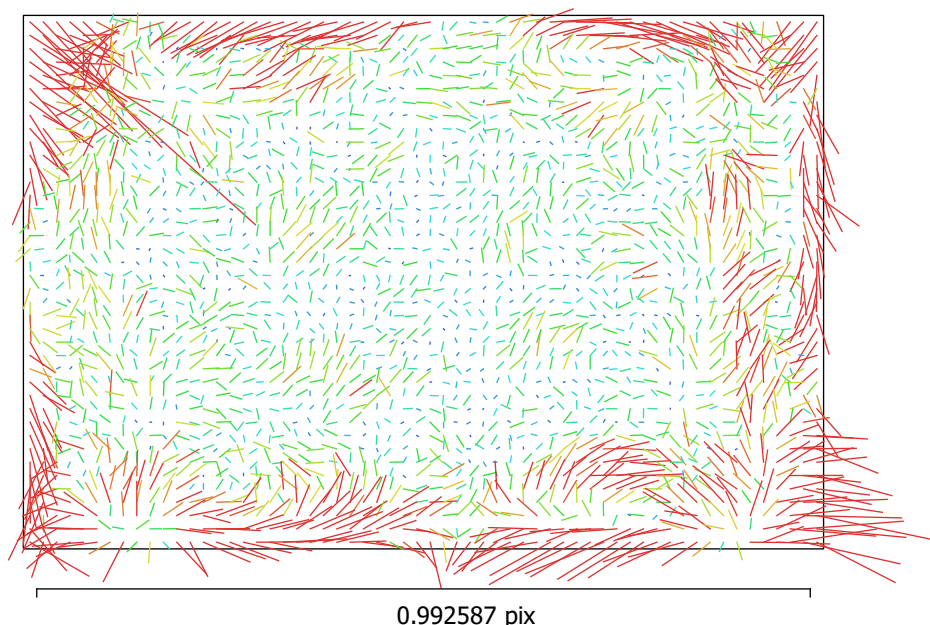


Fig. 2. Image residuals for ILCE-6000, E 16mm F2.8 (16mm).

ILCE-6000, E 16mm F2.8 (16mm)

1054 images

Type
Frame

Resolution
6000 x 4000

Focal Length
16 mm

Pixel Size
4 x 4 μ m

	Valor	Error	F	Cx	Cy	B1	B2	K1	K2	K3	K4	P1	P2
F	4056.42	0.14	1.00	0.04	-0.19	-0.21	0.05	-0.88	0.86	-0.82	0.77	-0.00	0.05
Cx	4.19559	0.04		1.00	-0.04	-0.00	0.12	-0.01	0.02	-0.02	0.03	0.96	-0.01
Cy	20.0368	0.032			1.00	-0.14	0.01	-0.01	0.01	-0.01	0.01	-0.00	0.81
B1	-0.654289	0.0063				1.00	0.01	0.31	-0.30	0.26	-0.22	-0.02	-0.01
B2	0.0689315	0.004					1.00	-0.01	0.01	-0.01	0.01	0.01	0.04
K1	-0.0735883	0.00026						1.00	-0.99	0.96	-0.92	-0.01	-0.02
K2	0.110967	0.00079							1.00	-0.99	0.96	0.01	0.02
K3	-0.0351471	0.0011								1.00	-0.99	-0.01	-0.02
K4	0.0287448	0.00054									1.00	0.02	0.02
P1	7.71234e-05	6.6e-06										1.00	-0.01
P2	-0.000403726	4.6e-06											1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

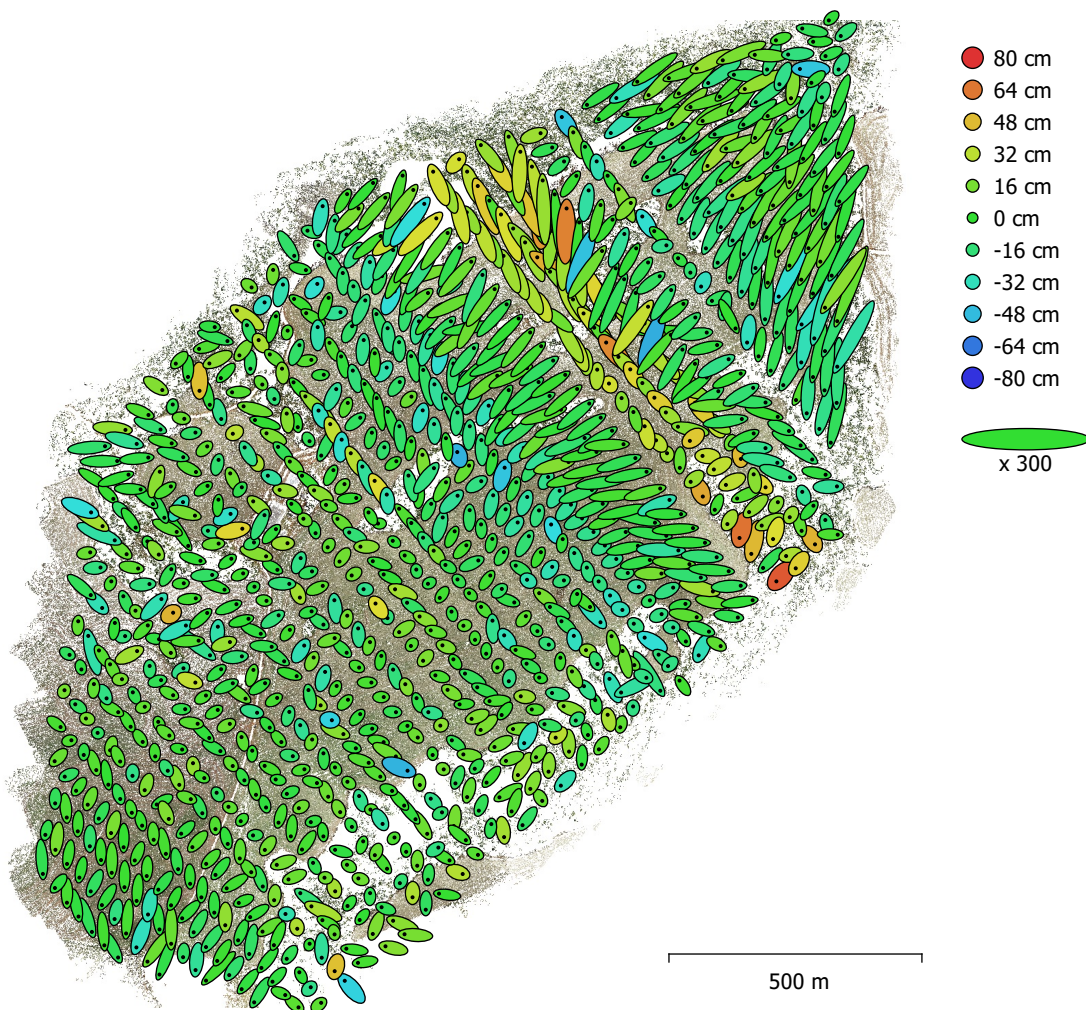


Fig. 3. Camera locations and error estimates.

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 (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total error (cm)
10.0455	12.1032	17.8101	15.7289	23.7613

Table 3. Average camera location error.

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

Ground Control Points

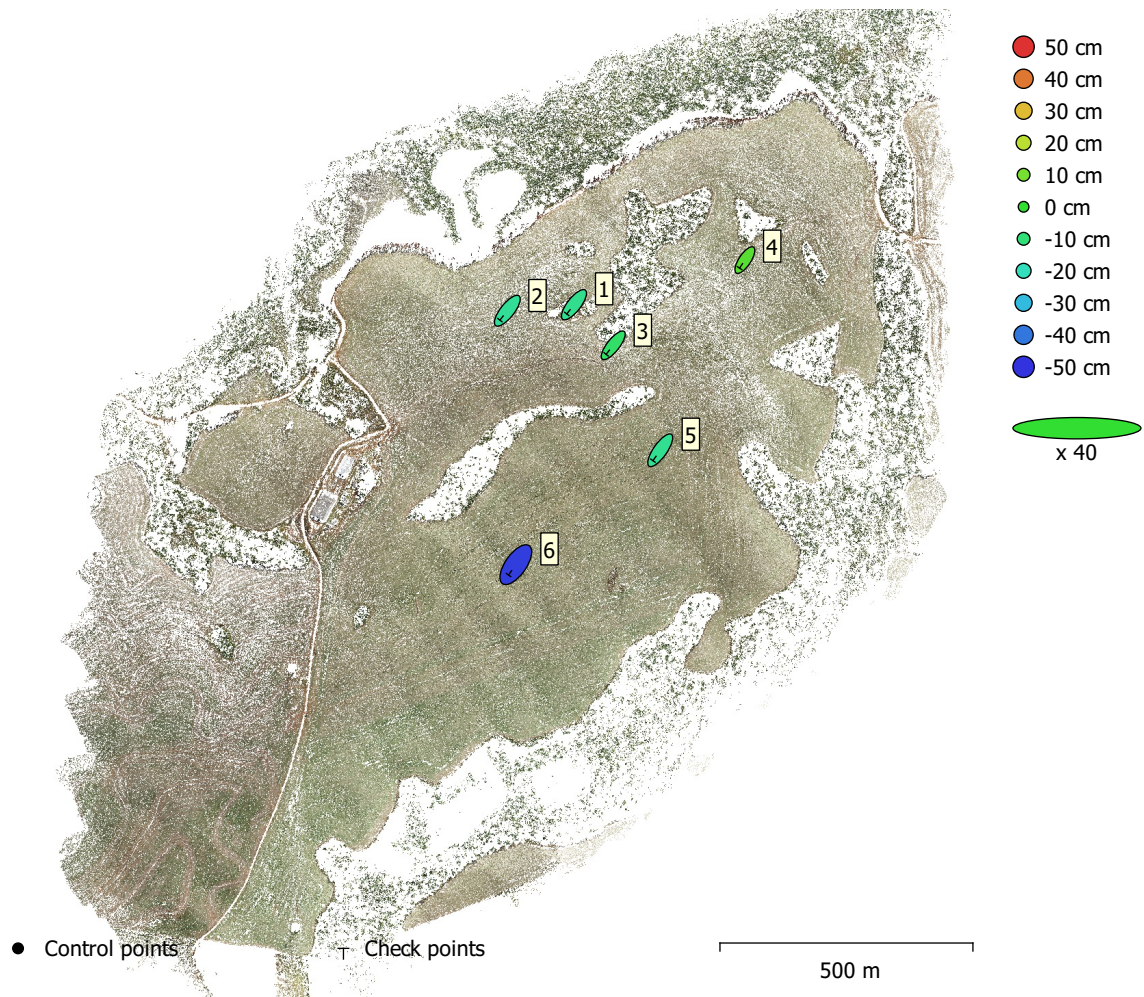


Fig. 4. GCP locations and error estimates.

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.

Número	X error (m)	Y error (m)	Z error (m)	XY error (m)	Total (m)
6	0.690886	0.932386	0.224147	1.16046	1.18191

Table 4. Check points RMSE.

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

Rótulo	X error (m)	Y error (m)	Z error (m)	Total (m)	Imagem (pix)
2	-0.734551	-0.93012	-0.147202	1.1943	0.564 (19)
3	-0.706372	-0.89004	-0.077348	1.13891	0.523 (15)
4	-0.527702	-0.790419	0.0551239	0.951982	0.458 (14)
5	-0.718979	-1.025	-0.13532	1.25931	0.443 (11)
6	-0.723037	-1.02517	-0.484368	1.34476	0.773 (8)
1	-0.712204	-0.912369	-0.133563	1.16511	0.684 (21)
Total	0.690886	0.932386	0.224147	1.18191	0.583

Table 5. Check points.
X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

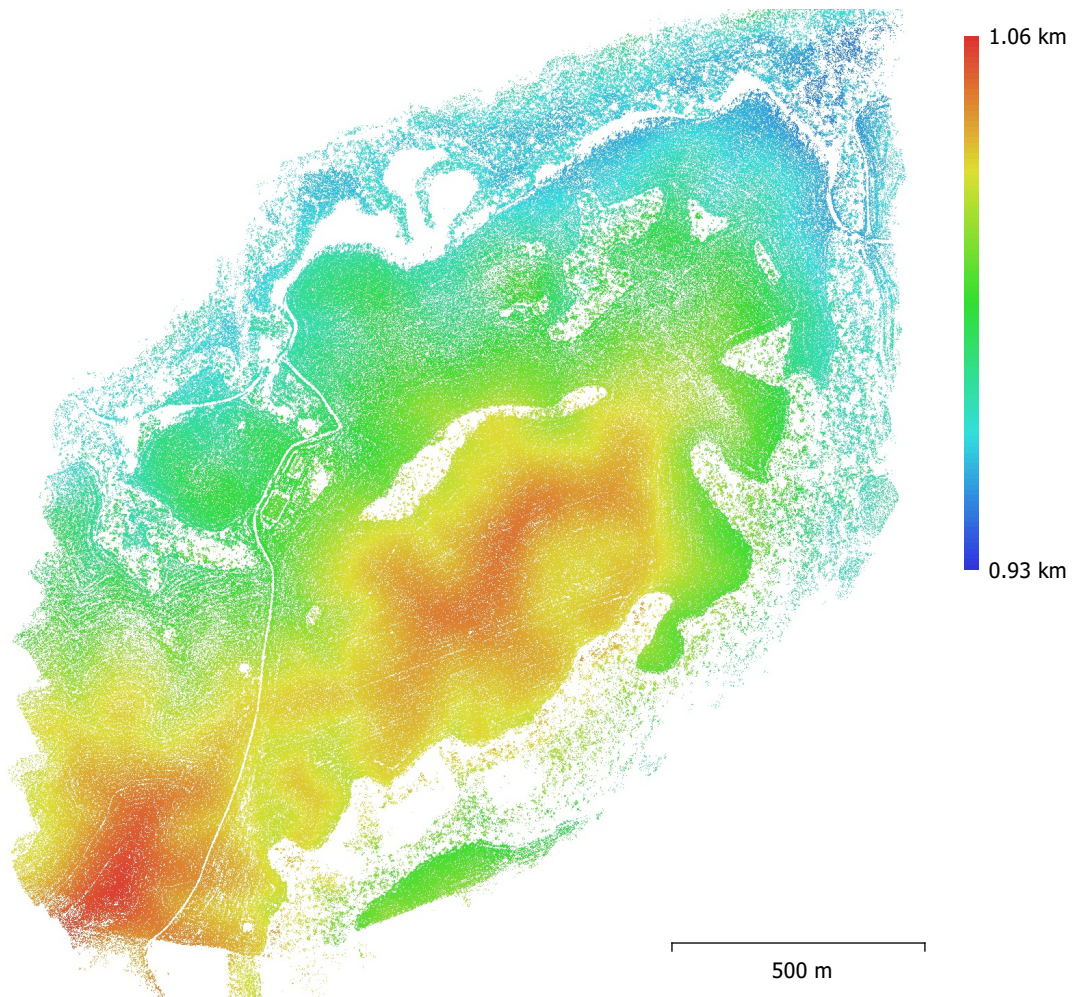


Fig. 5. Reconstructed digital elevation model.

Resolution: unknown
Point density: unknown

Processing Parameters

Geral

Câmaras	1054
Aligned cameras	1054
Marcadores	6
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Nuvem de Pontos

Pontos	2,086,320 of 2,400,225
RMS reprojection error	0.180984 (0.620879 pix)
Max reprojection error	1.51757 (15.0169 pix)
Mean key point size	3.25773 pix
Cores dos pontos	3 bands, uint8
Key points	Não
Average tie point multiplicity	3.73427

Parâmetros de alinhamento

Precisão	Elevada
Generic preselection	Não
Reference preselection	Source
Key point limit	40,000
Tie point limit	10,000
Filter points by mask	Sim
Mask tie points	Não
Guided image matching	Não
Adaptive camera model fitting	Sim
Matching time	1 hours 10 minutes
Matching memory usage	410.63 MB
Alignment time	11 minutes 57 seconds
Alignment memory usage	710.59 MB

Optimization parameters

Parâmetros	f, b1, b2, cx, cy, k1-k4, p1, p2
Fit additional corrections	Sim
Adaptive camera model fitting	Não
Optimization time	6 minutes 32 seconds
Software version	1.6.2.10247

System

Software name	Agisoft Metashape Professional
Software version	1.6.2 build 10247
OS	Windows 64 bit
RAM	31.95 GB
CPU	Intel(R) Core(TM) i7-7700K CPU @ 4.20GHz
GPU(s)	GeForce GTX 1060 6GB