Quality Report

Generated with Pix4Dmapper version 4.5.6

Important: Click on the different icons for:

Help to analyze the results in the Quality Report

Additional information about the sections

Click here for additional tips to analyze the Quality Report

Summary

Project	pix4d
Processed	2020-08-04 10:25:24
Camera Model Name(s)	_0.0_153x1080 (RGB), _0.0_247x996 (RGB), _0.0_390x976 (RGB), _0.0_387x888 (RGB), _0.0_438x1035 (RGB), _0.0_477x1032 (RGB), _0.0_432x991 (RGB), _0.0_387x1016 (RGB), _0.0_414x1057 (RGB), _0.0_441x1035 (RGB), _0.0_411x999 (RGB), _0.0_444x1051 (RGB), _0.0_265x960 (RGB), _0.0_453x1061 (RGB), _0.0_426x1044 (RGB), _0.0_429x1058 (RGB), _0.0_450x1080 (RGB), _0.0_456x1080 (RGB), _0.0_462x1080 (RGB), _0.0_474x1080 (RGB), _0.0_468x1080 (RGB), _0.0_283x995 (RGB), _0.0_501x1080 (RGB), _0.0_513x1080 (RGB), _0.0_510x1080 (RGB), _0.0_504x1080 (RGB), _0.0_525x1080 (RGB), _0.0_486x1080 (RGB), _0.0_522x1080 (RGB), _0.0_519x1080 (RGB), _0.0_320x1030 (RGB), _0.0_546x1080 (RGB), _0.0_528x1080 (RGB), _0.0_570x1080 (RGB), _0.0_555x1080 (RGB), _0.0_558x1080 (RGB), _0.0_606x1080 (RGB), _0.0_573x1080 (RGB), _0.0_579x1080 (RGB), _0.0_621x1080 (RGB), _0.0_343x967 (RGB), _0.0_627x1080 (RGB), _0.0_639x1080 (RGB), _0.0_594x1080 (RGB), _0.0_612x1080 (RGB), _0.0_582x1080 (RGB), _0.0_615x1080 (RGB), _0.0_588x1080 (RGB), _0.0_537x1080 (RGB), _0.0_354x942 (RGB), _0.0_597x1080 (RGB), _0.0_642x1080 (RGB), _0.0_660x1080 (RGB), _0.0_596x1080 (RGB), _0.0_351x972 (RGB), _0.0_556x1080 (RGB), _0.0_527x1080 (RGB), _0.0_511x1080 (RGB), _0.0_454x1080 (RGB), _0.0_419x1080 (RGB), _0.0_388x1008 (RGB), _0.0_422x1033 (RGB)
Average Ground Sampling Distance (GSD)	undefined
Time for Initial Processing (without report)	03m:49s

Quality Check

Images	median of 3423 keypoints per image	⚠
Dataset	76 out of 77 images calibrated (98%), all images enabled	✓
Camera Optimization	353.02% relative difference between initial and optimized internal camera parameters	✗
Matching	median of 1179.5 matches per calibrated image	✓
Georeferencing	no, no 3D GCP	⚠

Calibration Details

Number of Calibrated Images	76 out of 77
Number of Geolocated Images	0 out of 77

Initial Image Positions

The preview is not generated for images without geolocation.

Computed Image/GCPs/Manual Tie Points Positions

The preview is not generated for images without geolocation.

Bundle Block Adjustment Details

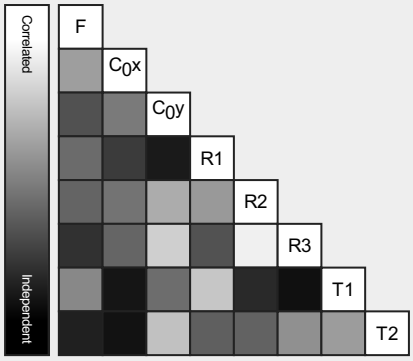
Number of 2D Keypoint Observations for Bundle Block Adjustment	82454
Number of 3D Points for Bundle Block Adjustment	23692
Mean Reprojection Error [pixels]	0.215

Internal Camera Parameters

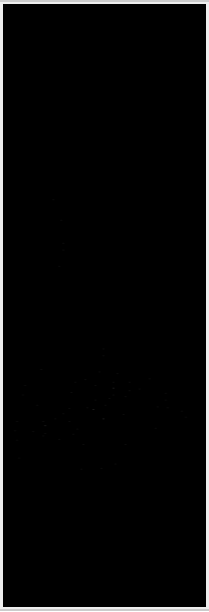
_0.0_153x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 179.294 [mm]

EXIF ID: _0.0_153x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	120.472 [pixel] 20.000 [mm]	76.500 [pixel] 12.700 [mm]	540.000 [pixel] 89.647 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1129.248 [pixel] 187.470 [mm]	154.718 [pixel] 25.685 [mm]	485.940 [pixel] 80.672 [mm]	2.096	-62.844	323.917	0.132	-0.140
Uncertainties (Sigma)	71.200 [pixel] 11.820 [mm]	22.945 [pixel] 3.809 [mm]	23.972 [pixel] 3.980 [mm]	1.167	19.438	136.768	0.039	0.029



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.



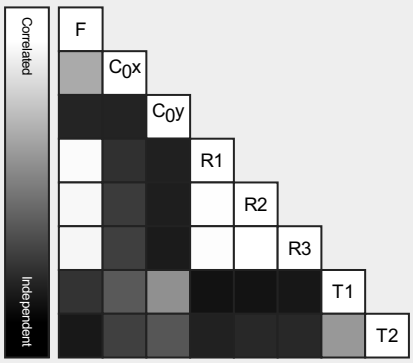
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_247x996 (RGB). Sensor Dimensions: 25.400 [mm] x 102.423 [mm]

EXIF ID: _0.0_247x996

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	194.488 [pixel] 20.000 [mm]	123.500 [pixel] 12.700 [mm]	498.000 [pixel] 51.211 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1511.293 [pixel] 155.412 [mm]	-415.150 [pixel] -42.692 [mm]	368.405 [pixel] 37.885 [mm]	0.204	-3.111	5.405	0.001	0.023
Uncertainties (Sigma)	273.218 [pixel] 28.096 [mm]	135.378 [pixel] 13.921 [mm]	149.116 [pixel] 15.334 [mm]	5.454	53.697	172.418	0.006	0.020



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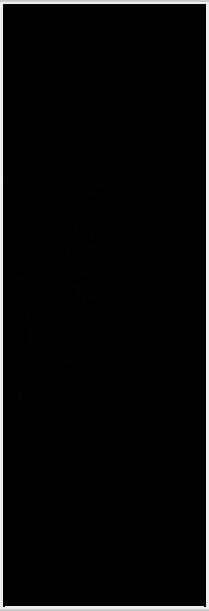

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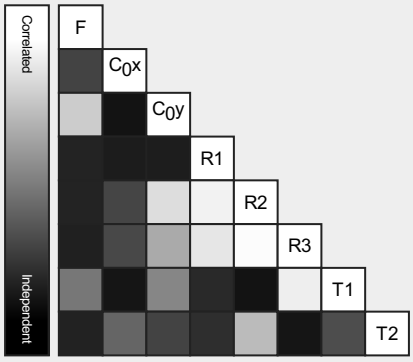
Internal Camera Parameters

_0.0_390x976 (RGB). Sensor Dimensions: 25.400 [mm] x 63.565 [mm]

EXIF ID: _0.0_390x976

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	307.087 [pixel] 20.000 [mm]	195.000 [pixel] 12.700 [mm]	488.000 [pixel] 31.783 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1651.249 [pixel] 107.543 [mm]	-110.115 [pixel] -7.172 [mm]	673.703 [pixel] 43.877 [mm]	-0.696	3.474	-10.308	-0.013	0.011
Uncertainties (Sigma)	17.658 [pixel] 1.150 [mm]	20.049 [pixel] 1.306 [mm]	13.412 [pixel] 0.874 [mm]	0.090	1.427	7.149	0.002	0.002



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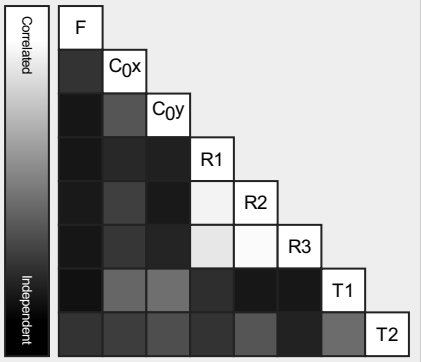
Internal Camera Parameters

_0.0_387x888 (RGB). Sensor Dimensions: 25.400 [mm] x 58.282 [mm]

EXIF ID: _0.0_387x888

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	304.724 [pixel] 20.000 [mm]	193.500 [pixel] 12.700 [mm]	444.000 [pixel] 29.141 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1647.882 [pixel] 108.156 [mm]	-32.214 [pixel] -2.114 [mm]	669.198 [pixel] 43.922 [mm]	-0.601	3.099	-8.744	-0.013	0.005

Uncertainties (Sigma)	17.467 [pixel] 1.146 [mm]	19.399 [pixel] 1.273 [mm]	14.837 [pixel] 0.974 [mm]	0.103	2.107	13.498	0.002	0.003



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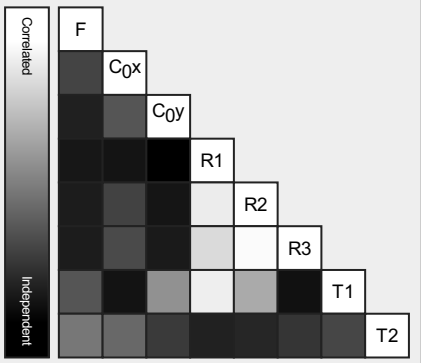
Internal Camera Parameters

_0.0_438x1035 (RGB). Sensor Dimensions: 25.400 [mm] x 60.021 [mm]

EXIF ID: _0.0_438x1035

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	344.882 [pixel] 20.000 [mm]	219.000 [pixel] 12.700 [mm]	517.500 [pixel] 30.010 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1662.037 [pixel] 96.383 [mm]	-58.176 [pixel] -3.374 [mm]	665.992 [pixel] 38.621 [mm]	-0.595	2.810	-9.192	-0.009	0.005
Uncertainties (Sigma)	17.657 [pixel] 1.024 [mm]	18.431 [pixel] 1.069 [mm]	14.750 [pixel] 0.855 [mm]	0.065	1.046	5.307	0.002	0.002



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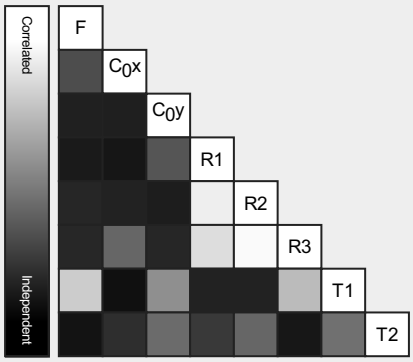
Internal Camera Parameters

_0.0_477x1032 (RGB). Sensor Dimensions: 25.400 [mm] x 54.953 [mm]

EXIF ID: _0.0_477x1032

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	375.591 [pixel] 20.000 [mm]	238.500 [pixel] 12.700 [mm]	516.000 [pixel] 27.477 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1650.732 [pixel] 87.901 [mm]	-30.541 [pixel] -1.626 [mm]	712.197 [pixel] 37.924 [mm]	-0.473	1.654	-5.499	-0.013	0.003
Uncertainties (Sigma)	17.584 [pixel] 0.936 [mm]	17.762 [pixel] 0.946 [mm]	16.843 [pixel] 0.897 [mm]	0.064	0.923	4.370	0.002	0.002



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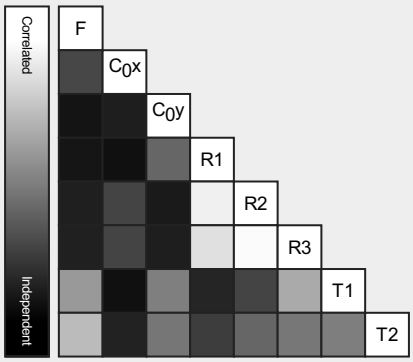
Internal Camera Parameters

_0.0_432x991 (RGB). Sensor Dimensions: 25.400 [mm] x 58.267 [mm]

EXIF ID: _0.0_432x991

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	340.157 [pixel] 20.000 [mm]	216.000 [pixel] 12.700 [mm]	495.500 [pixel] 29.134 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1650.472 [pixel] 97.042 [mm]	-19.884 [pixel] -1.169 [mm]	757.558 [pixel] 44.542 [mm]	-0.459	1.646	-6.127	-0.016	0.001
Uncertainties (Sigma)	17.420 [pixel] 1.024 [mm]	16.824 [pixel] 0.989 [mm]	16.268 [pixel] 0.957 [mm]	0.069	1.121	5.929	0.002	0.002



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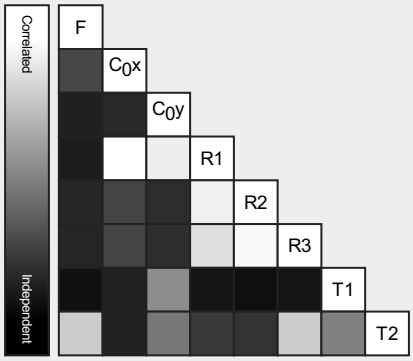
Internal Camera Parameters

_0.0_387x1016 (RGB). Sensor Dimensions: 25.400 [mm] x 66.683 [mm]

EXIF ID: _0.0_387x1016

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	304.724 [pixel] 20.000 [mm]	193.500 [pixel] 12.700 [mm]	508.000 [pixel] 33.342 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1653.775 [pixel] 108.542 [mm]	-37.413 [pixel] -2.456 [mm]	756.583 [pixel] 49.657 [mm]	-0.469	1.683	-6.176	-0.015	0.001
Uncertainties (Sigma)	17.546 [pixel] 1.152 [mm]	17.125 [pixel] 1.124 [mm]	18.259 [pixel] 1.198 [mm]	0.073	1.208	6.457	0.002	0.002



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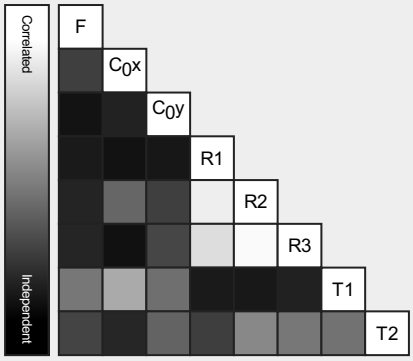
Internal Camera Parameters

_0.0_414x1057 (RGB). Sensor Dimensions: 25.400 [mm] x 64.850 [mm]

EXIF ID: _0.0_414x1057

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	325.984 [pixel] 20.000 [mm]	207.000 [pixel] 12.700 [mm]	528.500 [pixel] 32.425 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1654.487 [pixel] 101.507 [mm]	17.012 [pixel] 1.044 [mm]	779.463 [pixel] 47.822 [mm]	-0.474	1.875	-6.750	-0.015	0.000
Uncertainties (Sigma)	17.360 [pixel] 1.065 [mm]	15.549 [pixel] 0.954 [mm]	16.079 [pixel] 0.987 [mm]	0.061	1.014	5.239	0.002	0.002



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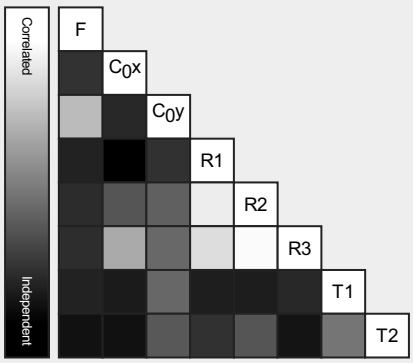
Internal Camera Parameters

_0.0_441x1035 (RGB). Sensor Dimensions: 25.400 [mm] x 59.612 [mm]

EXIF ID: _0.0_441x1035

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	347.244 [pixel] 20.000 [mm]	220.500 [pixel] 12.700 [mm]	517.500 [pixel] 29.806 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1651.445 [pixel] 95.117 [mm]	60.977 [pixel] 3.512 [mm]	807.157 [pixel] 46.489 [mm]	-0.525	2.435	-8.761	-0.019	0.002
Uncertainties (Sigma)	17.234 [pixel] 0.993 [mm]	14.793 [pixel] 0.852 [mm]	15.711 [pixel] 0.905 [mm]	0.063	1.057	5.379	0.002	0.002



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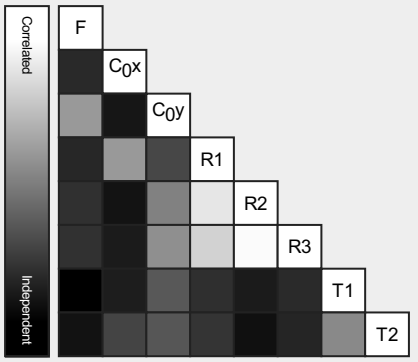
Internal Camera Parameters

_0.0_411x999 (RGB). Sensor Dimensions: 25.400 [mm] x 61.739 [mm]

EXIF ID: _0.0_411x999

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	323.622 [pixel] 20.000 [mm]	205.500 [pixel] 12.700 [mm]	499.500 [pixel] 30.869 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1648.407 [pixel] 101.872 [mm]	51.889 [pixel] 3.207 [mm]	828.945 [pixel] 51.229 [mm]	-0.545	2.872	-11.265	-0.021	0.005
Uncertainties (Sigma)	17.153 [pixel] 1.060 [mm]	15.107 [pixel] 0.934 [mm]	16.701 [pixel] 1.032 [mm]	0.065	1.138	6.003	0.002	0.002



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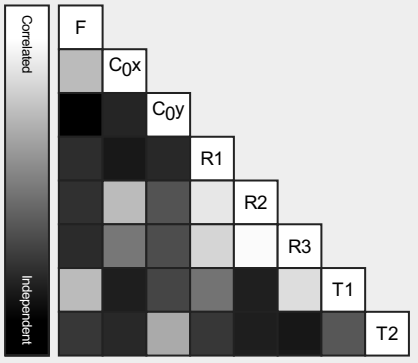
Internal Camera Parameters

_0.0_444x1051 (RGB). Sensor Dimensions: 25.400 [mm] x 60.125 [mm]

EXIF ID: _0.0_444x1051

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	349.606 [pixel] 20.000 [mm]	222.000 [pixel] 12.700 [mm]	525.500 [pixel] 30.062 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1649.584 [pixel] 94.368 [mm]	146.385 [pixel] 8.374 [mm]	883.100 [pixel] 50.520 [mm]	-0.519	1.444	-3.176	-0.023	0.006
Uncertainties (Sigma)	17.338 [pixel] 0.992 [mm]	14.332 [pixel] 0.820 [mm]	17.433 [pixel] 0.997 [mm]	0.062	0.830	3.759	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

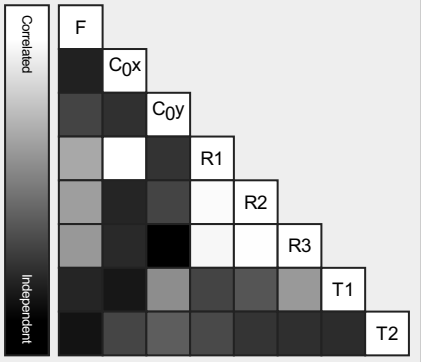
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_265x960 (RGB). Sensor Dimensions: 25.400 [mm] x 92.015 [mm]

EXIF ID: _0.0_265x960

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	208.661 [pixel] 20.000 [mm]	132.500 [pixel] 12.700 [mm]	480.000 [pixel] 46.008 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1578.919 [pixel] 151.338 [mm]	-294.388 [pixel] -28.217 [mm]	401.499 [pixel] 38.483 [mm]	-0.047	-3.010	8.478	0.005	0.016
Uncertainties (Sigma)	25.206 [pixel] 2.416 [mm]	49.464 [pixel] 4.741 [mm]	53.031 [pixel] 5.083 [mm]	0.463	6.214	26.925	0.003	0.006



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

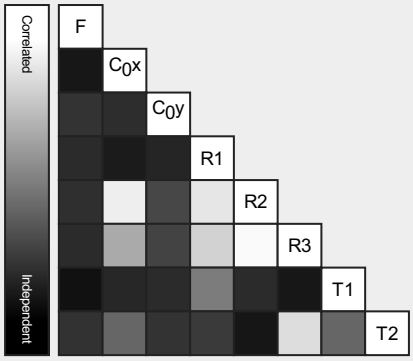
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_453x1061 (RGB). Sensor Dimensions: 25.400 [mm] x 59.491 [mm]

EXIF ID: _0.0_453x1061

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	356.693 [pixel] 20.000 [mm]	226.500 [pixel] 12.700 [mm]	530.500 [pixel] 29.745 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1648.167 [pixel] 92.414 [mm]	139.742 [pixel] 7.835 [mm]	880.593 [pixel] 49.375 [mm]	-0.461	1.083	-2.288	-0.024	0.004
Uncertainties (Sigma)	17.245 [pixel] 0.967 [mm]	13.521 [pixel] 0.758 [mm]	15.921 [pixel] 0.893 [mm]	0.054	0.690	3.044	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

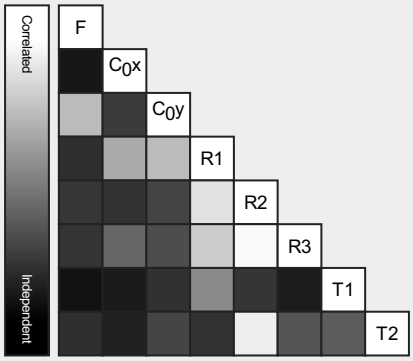
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_426x1044 (RGB). Sensor Dimensions: 25.400 [mm] x 62.248 [mm]

EXIF ID: _0.0_426x1044

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	335.433 [pixel] 20.000 [mm]	213.000 [pixel] 12.700 [mm]	522.000 [pixel] 31.124 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1651.057 [pixel] 98.443 [mm]	151.939 [pixel] 9.059 [mm]	874.059 [pixel] 52.115 [mm]	-0.437	1.401	-3.986	-0.019	0.001
Uncertainties (Sigma)	17.351 [pixel] 1.035 [mm]	13.898 [pixel] 0.829 [mm]	18.728 [pixel] 1.117 [mm]	0.062	0.819	3.841	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

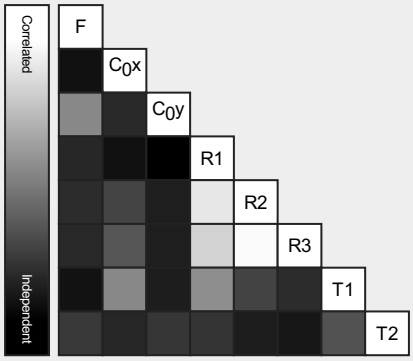
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_429x1058 (RGB). Sensor Dimensions: 25.400 [mm] x 62.641 [mm]

EXIF ID: _0.0_429x1058

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	337.795 [pixel] 20.000 [mm]	214.500 [pixel] 12.700 [mm]	529.000 [pixel] 31.321 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1649.155 [pixel] 97.642 [mm]	162.459 [pixel] 9.619 [mm]	876.571 [pixel] 51.900 [mm]	-0.389	0.824	-1.727	-0.018	0.002
Uncertainties (Sigma)	17.207 [pixel] 1.019 [mm]	13.067 [pixel] 0.774 [mm]	16.940 [pixel] 1.003 [mm]	0.059	0.752	3.480	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

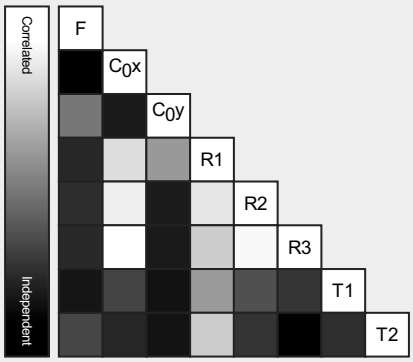
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_450x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 60.960 [mm]

EXIF ID: _0.0_450x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	354.331 [pixel] 20.000 [mm]	225.000 [pixel] 12.700 [mm]	540.000 [pixel] 30.480 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1651.425 [pixel] 93.214 [mm]	212.216 [pixel] 11.978 [mm]	894.919 [pixel] 50.513 [mm]	-0.374	0.651	-1.220	-0.019	0.003
Uncertainties (Sigma)	17.240 [pixel] 0.973 [mm]	11.709 [pixel] 0.661 [mm]	14.101 [pixel] 0.796 [mm]	0.050	0.576	2.521	0.003	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

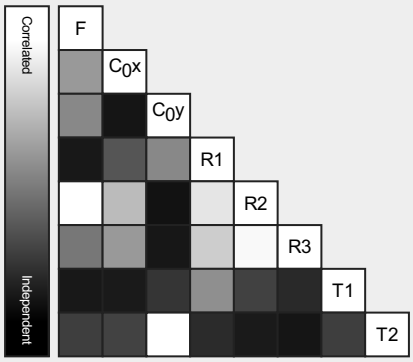
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_456x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 60.158 [mm]

EXIF ID: _0.0_456x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	359.055 [pixel] 20.000 [mm]	228.000 [pixel] 12.700 [mm]	540.000 [pixel] 30.079 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1639.620 [pixel] 91.330 [mm]	194.519 [pixel] 10.835 [mm]	924.699 [pixel] 51.507 [mm]	-0.211	-0.482	2.126	-0.012	0.002
Uncertainties (Sigma)	17.101 [pixel] 0.953 [mm]	11.088 [pixel] 0.618 [mm]	14.269 [pixel] 0.795 [mm]	0.054	0.731	3.687	0.003	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

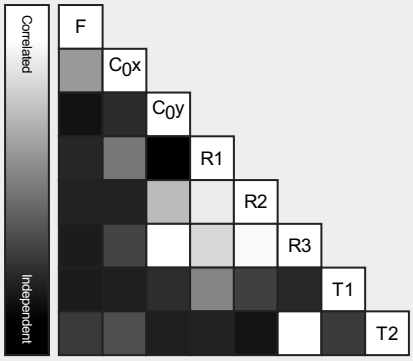
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_462x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 59.377 [mm]

EXIF ID: _0.0_462x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	363.780 [pixel] 20.000 [mm]	231.000 [pixel] 12.700 [mm]	540.000 [pixel] 29.688 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1645.323 [pixel] 90.457 [mm]	197.360 [pixel] 10.851 [mm]	893.738 [pixel] 49.136 [mm]	-0.258	-0.136	1.234	-0.013	0.002
Uncertainties (Sigma)	17.241 [pixel] 0.948 [mm]	13.610 [pixel] 0.748 [mm]	17.767 [pixel] 0.977 [mm]	0.069	1.000	5.124	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

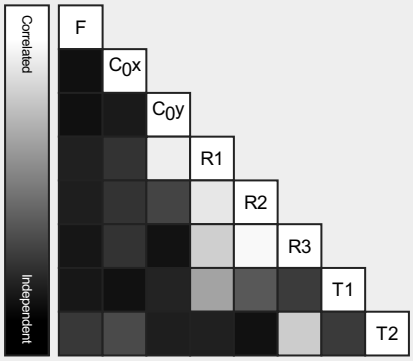
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_474x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 57.873 [mm]

EXIF ID: _0.0_474x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	373.228 [pixel] 20.000 [mm]	237.000 [pixel] 12.700 [mm]	540.000 [pixel] 28.937 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1647.099 [pixel] 88.262 [mm]	202.418 [pixel] 10.847 [mm]	909.269 [pixel] 48.725 [mm]	-0.277	-0.179	1.469	-0.015	0.002
Uncertainties (Sigma)	17.145 [pixel] 0.919 [mm]	13.362 [pixel] 0.716 [mm]	17.378 [pixel] 0.931 [mm]	0.058	0.626	2.610	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

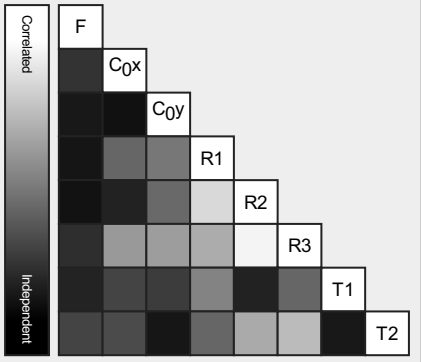
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_468x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 58.615 [mm]

EXIF ID: _0.0_468x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	368.504 [pixel] 20.000 [mm]	234.000 [pixel] 12.700 [mm]	540.000 [pixel] 29.308 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1641.628 [pixel] 89.097 [mm]	238.494 [pixel] 12.944 [mm]	910.681 [pixel] 49.426 [mm]	-0.106	-3.789	22.563	-0.018	0.000
Uncertainties (Sigma)	17.304 [pixel] 0.939 [mm]	10.928 [pixel] 0.593 [mm]	14.455 [pixel] 0.785 [mm]	0.070	1.117	6.943	0.003	0.002



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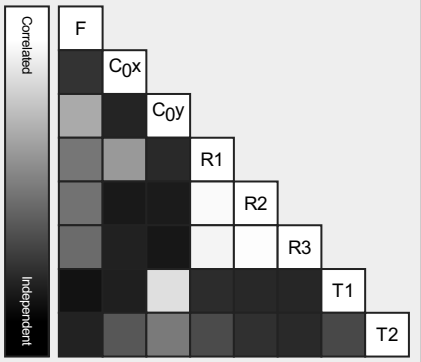
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_283x995 (RGB). Sensor Dimensions: 25.400 [mm] x 89.304 [mm]

EXIF ID: _0.0_283x995

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	222.835 [pixel] 20.000 [mm]	141.500 [pixel] 12.700 [mm]	497.500 [pixel] 44.652 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1601.279 [pixel] 143.719 [mm]	-265.911 [pixel] -23.866 [mm]	459.150 [pixel] 41.210 [mm]	-0.291	-1.058	3.982	-0.000	0.014
Uncertainties (Sigma)	20.170 [pixel] 1.810 [mm]	37.881 [pixel] 3.400 [mm]	63.006 [pixel] 5.655 [mm]	0.271	3.590	15.425	0.005	0.005



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

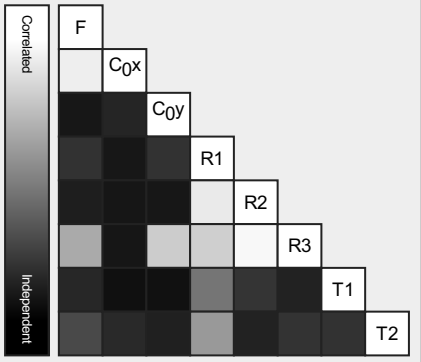
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_501x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 54.754 [mm]

EXIF ID: _0.0_501x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	394.488 [pixel] 20.000 [mm]	250.500 [pixel] 12.700 [mm]	540.000 [pixel] 27.377 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1649.346 [pixel] 83.620 [mm]	236.282 [pixel] 11.979 [mm]	918.326 [pixel] 46.558 [mm]	-0.357	-0.538	6.508	-0.025	0.001
Uncertainties (Sigma)	17.334 [pixel] 0.879 [mm]	10.520 [pixel] 0.533 [mm]	11.989 [pixel] 0.608 [mm]	0.062	0.939	5.086	0.002	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

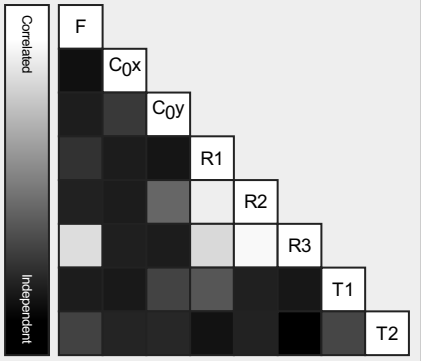
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_513x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 53.474 [mm]

EXIF ID: _0.0_513x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	403.937 [pixel] 20.000 [mm]	256.500 [pixel] 12.700 [mm]	540.000 [pixel] 26.737 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1655.771 [pixel] 81.982 [mm]	239.824 [pixel] 11.874 [mm]	881.198 [pixel] 43.630 [mm]	-0.386	-0.714	10.459	-0.026	0.000
Uncertainties (Sigma)	17.420 [pixel] 0.863 [mm]	11.908 [pixel] 0.590 [mm]	13.298 [pixel] 0.658 [mm]	0.083	1.536	9.552	0.003	0.002



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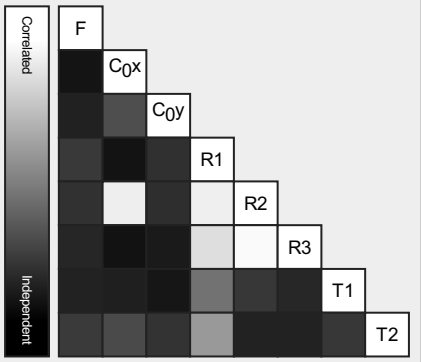
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_510x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 53.788 [mm]

EXIF ID: _0.0_510x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	401.575 [pixel] 20.000 [mm]	255.000 [pixel] 12.700 [mm]	540.000 [pixel] 26.894 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1648.366 [pixel] 82.095 [mm]	242.103 [pixel] 12.058 [mm]	897.967 [pixel] 44.722 [mm]	-0.415	0.685	0.741	-0.024	-0.001
Uncertainties (Sigma)	17.399 [pixel] 0.867 [mm]	13.440 [pixel] 0.669 [mm]	15.065 [pixel] 0.750 [mm]	0.086	1.466	8.450	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

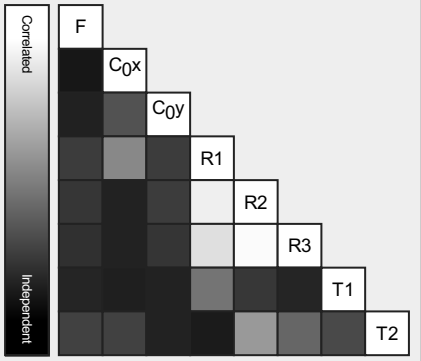
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_504x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 54.429 [mm]

EXIF ID: _0.0_504x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	396.850 [pixel] 20.000 [mm]	252.000 [pixel] 12.700 [mm]	540.000 [pixel] 27.214 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1646.607 [pixel] 82.984 [mm]	229.202 [pixel] 11.551 [mm]	907.865 [pixel] 45.754 [mm]	-0.406	0.868	-2.337	-0.023	0.002
Uncertainties (Sigma)	17.377 [pixel] 0.876 [mm]	15.307 [pixel] 0.771 [mm]	16.369 [pixel] 0.825 [mm]	0.086	1.413	7.912	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

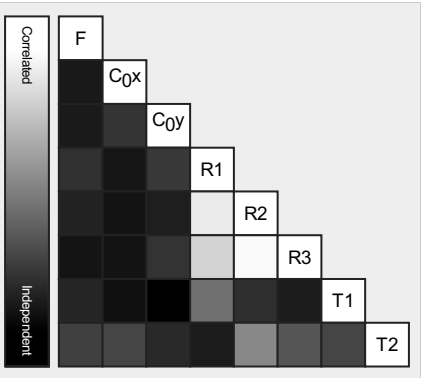
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_525x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 52.251 [mm]

EXIF ID: _0.0_525x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	413.386 [pixel] 20.000 [mm]	262.500 [pixel] 12.700 [mm]	540.000 [pixel] 26.126 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1644.485 [pixel] 79.562 [mm]	227.403 [pixel] 11.002 [mm]	919.079 [pixel] 44.466 [mm]	-0.314	-0.494	5.113	-0.022	0.001
Uncertainties (Sigma)	17.196 [pixel] 0.832 [mm]	11.567 [pixel] 0.560 [mm]	12.891 [pixel] 0.624 [mm]	0.065	1.025	5.687	0.002	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

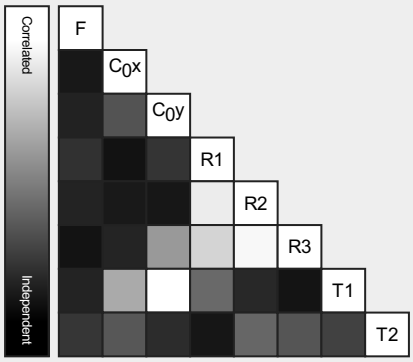
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_486x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 56.444 [mm]

EXIF ID: _0.0_486x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	382.677 [pixel] 20.000 [mm]	243.000 [pixel] 12.700 [mm]	540.000 [pixel] 28.222 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1641.715 [pixel] 85.802 [mm]	221.941 [pixel] 11.599 [mm]	908.627 [pixel] 47.488 [mm]	-0.308	-0.779	7.506	-0.023	0.001
Uncertainties (Sigma)	17.231 [pixel] 0.901 [mm]	14.546 [pixel] 0.760 [mm]	16.058 [pixel] 0.839 [mm]	0.083	1.422	8.349	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

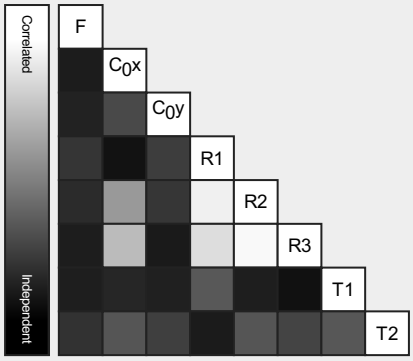
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_522x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 52.552 [mm]

EXIF ID: _0.0_522x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	411.024 [pixel] 20.000 [mm]	261.000 [pixel] 12.700 [mm]	540.000 [pixel] 26.276 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1646.391 [pixel] 80.112 [mm]	225.871 [pixel] 10.991 [mm]	898.608 [pixel] 43.725 [mm]	-0.378	0.051	5.602	-0.022	-0.001
Uncertainties (Sigma)	17.248 [pixel] 0.839 [mm]	12.964 [pixel] 0.631 [mm]	15.420 [pixel] 0.750 [mm]	0.092	1.730	10.688	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

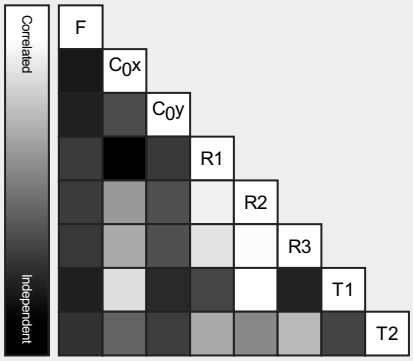
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_519x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 52.855 [mm]

EXIF ID: _0.0_519x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	408.661 [pixel] 20.000 [mm]	259.500 [pixel] 12.700 [mm]	540.000 [pixel] 26.428 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1645.919 [pixel] 80.552 [mm]	230.941 [pixel] 11.302 [mm]	887.721 [pixel] 43.445 [mm]	-0.464	2.618	-11.568	-0.022	-0.001
Uncertainties (Sigma)	17.246 [pixel] 0.844 [mm]	13.495 [pixel] 0.660 [mm]	14.474 [pixel] 0.708 [mm]	0.097	2.043	13.562	0.002	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

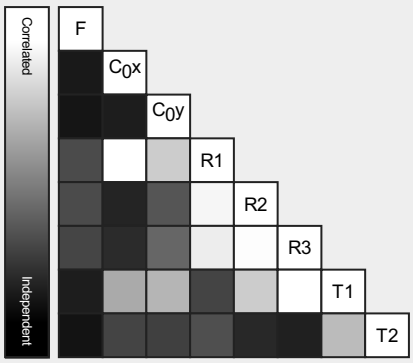
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_320x1030 (RGB). Sensor Dimensions: 25.400 [mm] x 81.756 [mm]

EXIF ID: _0.0_320x1030

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	251.969 [pixel] 20.000 [mm]	160.000 [pixel] 12.700 [mm]	515.000 [pixel] 40.878 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1615.003 [pixel] 128.191 [mm]	-237.102 [pixel] -18.820 [mm]	453.503 [pixel] 35.997 [mm]	-0.233	-1.111	3.634	0.000	0.007
Uncertainties (Sigma)	18.677 [pixel] 1.482 [mm]	31.892 [pixel] 2.531 [mm]	39.215 [pixel] 3.113 [mm]	0.149	1.903	7.975	0.003	0.004



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

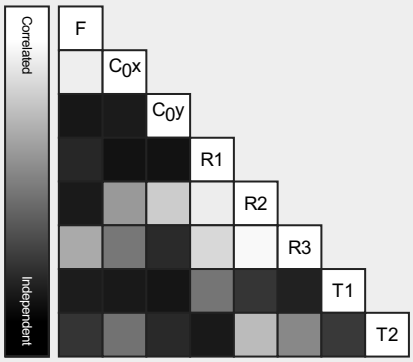
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_546x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 50.242 [mm]

EXIF ID: _0.0_546x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	429.921 [pixel] 20.000 [mm]	273.000 [pixel] 12.700 [mm]	540.000 [pixel] 25.121 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1640.241 [pixel] 76.304 [mm]	240.997 [pixel] 11.211 [mm]	942.831 [pixel] 43.861 [mm]	-0.171	-1.455	9.019	-0.010	-0.001
Uncertainties (Sigma)	17.187 [pixel] 0.800 [mm]	12.428 [pixel] 0.578 [mm]	15.108 [pixel] 0.703 [mm]	0.079	1.225	6.613	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

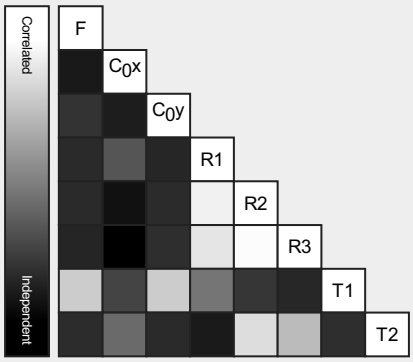
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_528x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 51.955 [mm]

EXIF ID: _0.0_528x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	415.748 [pixel] 20.000 [mm]	264.000 [pixel] 12.700 [mm]	540.000 [pixel] 25.977 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1621.928 [pixel] 78.025 [mm]	236.713 [pixel] 11.387 [mm]	1016.784 [pixel] 48.913 [mm]	-0.086	-0.633	1.990	0.004	-0.001
Uncertainties (Sigma)	16.973 [pixel] 0.817 [mm]	11.166 [pixel] 0.537 [mm]	15.598 [pixel] 0.750 [mm]	0.076	0.854	3.368	0.003	0.001



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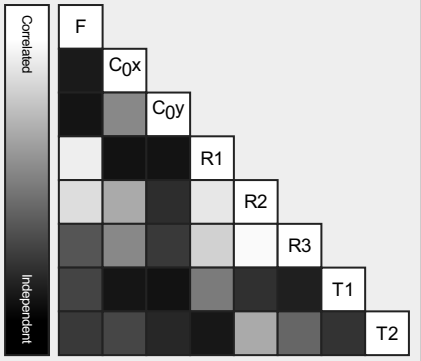
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_570x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 48.126 [mm]

EXIF ID: _0.0_570x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	448.819 [pixel] 20.000 [mm]	285.000 [pixel] 12.700 [mm]	540.000 [pixel] 24.063 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1626.318 [pixel] 72.471 [mm]	254.725 [pixel] 11.351 [mm]	1017.835 [pixel] 45.356 [mm]	-0.057	-1.135	3.890	0.003	-0.001
Uncertainties (Sigma)	16.712 [pixel] 0.745 [mm]	6.847 [pixel] 0.305 [mm]	10.743 [pixel] 0.479 [mm]	0.039	0.433	1.763	0.002	0.001



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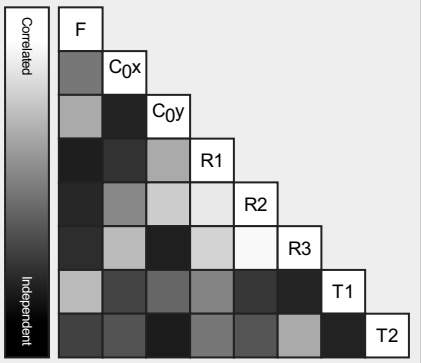
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_555x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 49.427 [mm]

EXIF ID: _0.0_555x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	437.008 [pixel] 20.000 [mm]	277.500 [pixel] 12.700 [mm]	540.000 [pixel] 24.714 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1630.655 [pixel] 74.628 [mm]	253.980 [pixel] 11.624 [mm]	1013.778 [pixel] 46.396 [mm]	-0.148	-0.035	-0.915	0.001	0.002
Uncertainties (Sigma)	16.888 [pixel] 0.773 [mm]	7.839 [pixel] 0.359 [mm]	11.725 [pixel] 0.537 [mm]	0.044	0.490	2.000	0.002	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

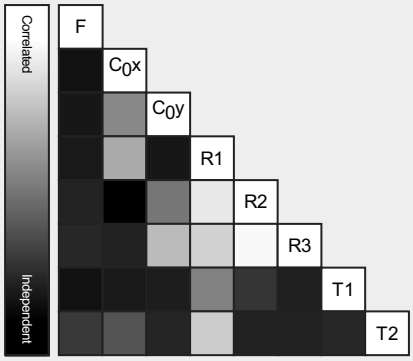
Internal Camera Parameters

_0.0_558x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 49.161 [mm]

EXIF ID: _0.0_558x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	439.370 [pixel] 20.000 [mm]	279.000 [pixel] 12.700 [mm]	540.000 [pixel] 24.581 [mm]	0.000	0.000	0.000	0.000	0.000

Optimized Values	1622.905 [pixel] 73.874 [mm]	259.577 [pixel] 11.816 [mm]	1036.753 [pixel] 47.193 [mm]	-0.105	-0.094	-0.539	0.007	0.000
Uncertainties (Sigma)	16.762 [pixel] 0.763 [mm]	7.219 [pixel] 0.329 [mm]	11.422 [pixel] 0.520 [mm]	0.041	0.428	1.640	0.002	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

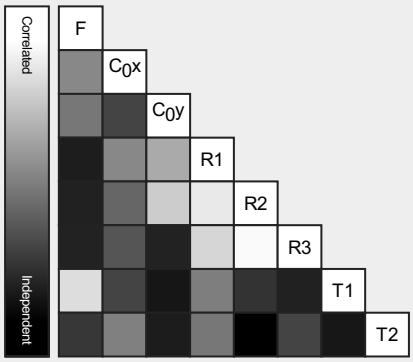
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_606x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 45.267 [mm]

EXIF ID: _0.0_606x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	477.165 [pixel] 20.000 [mm]	303.000 [pixel] 12.700 [mm]	540.000 [pixel] 22.634 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1627.431 [pixel] 68.212 [mm]	285.027 [pixel] 11.947 [mm]	1014.582 [pixel] 42.525 [mm]	-0.097	-0.365	0.532	0.003	0.001
Uncertainties (Sigma)	16.933 [pixel] 0.710 [mm]	9.421 [pixel] 0.395 [mm]	12.922 [pixel] 0.542 [mm]	0.050	0.555	2.203	0.002	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

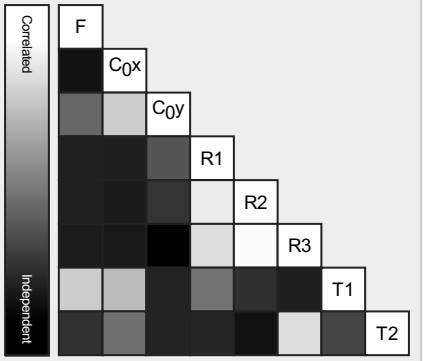
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_573x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 47.874 [mm]

EXIF ID: _0.0_573x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	451.181 [pixel] 20.000 [mm]	286.500 [pixel] 12.700 [mm]	540.000 [pixel] 23.937 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1634.146 [pixel] 72.439 [mm]	244.424 [pixel] 10.835 [mm]	1006.161 [pixel] 44.601 [mm]	-0.150	-0.329	1.294	-0.001	-0.001
Uncertainties (Sigma)	16.855 [pixel] 0.747 [mm]	9.946 [pixel] 0.441 [mm]	13.215 [pixel] 0.586 [mm]	0.058	0.722	3.166	0.002	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

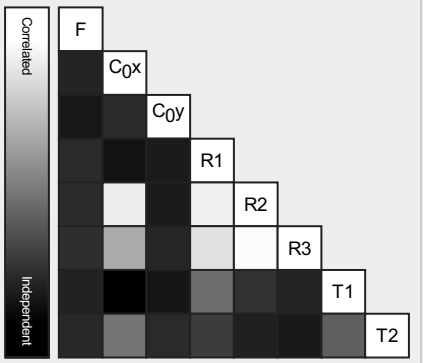
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_579x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 47.378 [mm]

EXIF ID: _0.0_579x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	455.906 [pixel] 20.000 [mm]	289.500 [pixel] 12.700 [mm]	540.000 [pixel] 23.689 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1646.302 [pixel] 72.221 [mm]	223.033 [pixel] 9.784 [mm]	945.143 [pixel] 41.462 [mm]	-0.187	0.084	-2.382	-0.008	-0.003
Uncertainties (Sigma)	17.094 [pixel] 0.750 [mm]	11.136 [pixel] 0.489 [mm]	13.456 [pixel] 0.590 [mm]	0.070	1.165	6.535	0.002	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

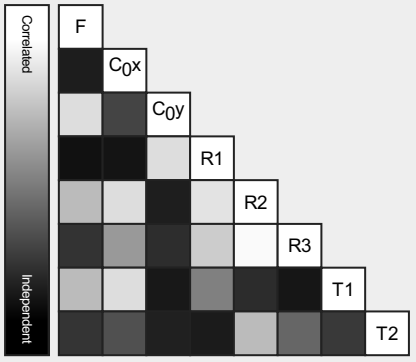
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_621x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 44.174 [mm]

EXIF ID: _0.0_621x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	488.976 [pixel] 20.000 [mm]	310.500 [pixel] 12.700 [mm]	540.000 [pixel] 22.087 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1626.148 [pixel] 66.512 [mm]	259.484 [pixel] 10.613 [mm]	1024.986 [pixel] 41.924 [mm]	-0.065	-1.144	3.674	0.000	-0.001
Uncertainties (Sigma)	16.736 [pixel] 0.685 [mm]	7.711 [pixel] 0.315 [mm]	11.479 [pixel] 0.470 [mm]	0.041	0.444	1.783	0.002	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

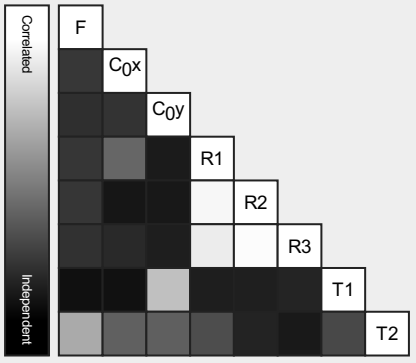
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_343x967 (RGB). Sensor Dimensions: 25.400 [mm] x 71.609 [mm]

EXIF ID: _0.0_343x967

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	270.079 [pixel] 20.000 [mm]	171.500 [pixel] 12.700 [mm]	483.500 [pixel] 35.804 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1623.697 [pixel] 120.239 [mm]	-176.910 [pixel] -13.101 [mm]	576.419 [pixel] 42.685 [mm]	-0.524	1.905	-7.759	-0.010	0.011
Uncertainties (Sigma)	18.144 [pixel] 1.344 [mm]	27.561 [pixel] 2.041 [mm]	28.259 [pixel] 2.093 [mm]	0.140	2.129	10.567	0.003	0.004



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

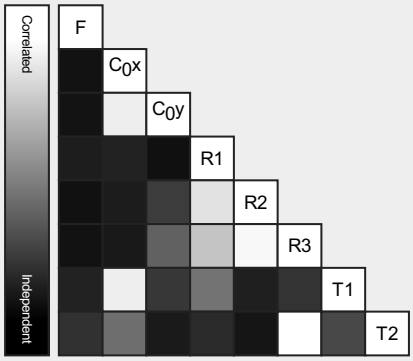
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_627x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 43.751 [mm]

EXIF ID: _0.0_627x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	493.701 [pixel] 20.000 [mm]	313.500 [pixel] 12.700 [mm]	540.000 [pixel] 21.876 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1637.504 [pixel] 66.336 [mm]	258.177 [pixel] 10.459 [mm]	970.266 [pixel] 39.306 [mm]	0.018	-3.622	16.778	-0.007	-0.001
Uncertainties (Sigma)	17.101 [pixel] 0.693 [mm]	10.363 [pixel] 0.420 [mm]	13.105 [pixel] 0.531 [mm]	0.069	1.033	5.514	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

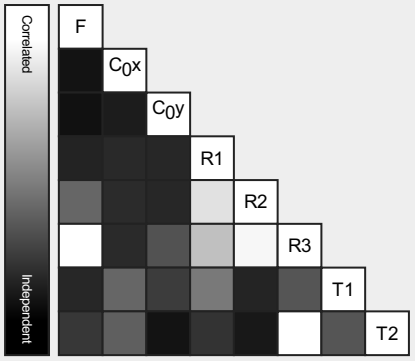
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_639x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 42.930 [mm]

EXIF ID: _0.0_639x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	503.150 [pixel] 20.000 [mm]	319.500 [pixel] 12.700 [mm]	540.000 [pixel] 21.465 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1637.583 [pixel] 65.093 [mm]	248.808 [pixel] 9.890 [mm]	979.080 [pixel] 38.918 [mm]	-0.049	-3.002	13.740	-0.013	0.001
Uncertainties (Sigma)	17.080 [pixel] 0.679 [mm]	11.225 [pixel] 0.446 [mm]	13.001 [pixel] 0.517 [mm]	0.066	0.902	4.505	0.003	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

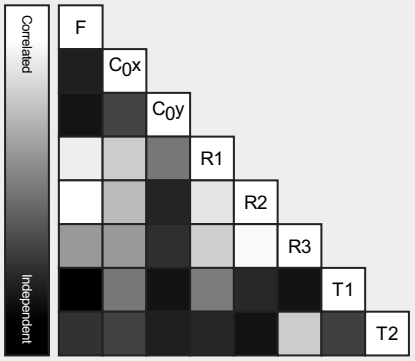
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_594x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 46.182 [mm]

EXIF ID: _0.0_594x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	467.717 [pixel] 20.000 [mm]	297.000 [pixel] 12.700 [mm]	540.000 [pixel] 23.091 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1620.568 [pixel] 69.297 [mm]	233.305 [pixel] 9.976 [mm]	1036.628 [pixel] 44.327 [mm]	-0.031	-1.014	2.987	0.007	-0.002
Uncertainties (Sigma)	16.642 [pixel] 0.712 [mm]	6.871 [pixel] 0.294 [mm]	11.476 [pixel] 0.491 [mm]	0.039	0.409	1.556	0.002	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

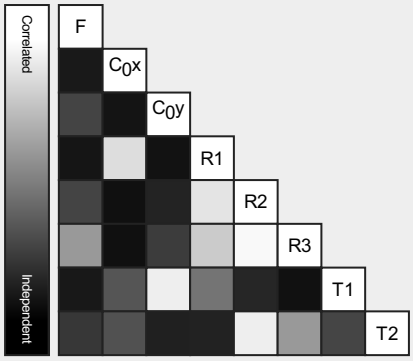
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_612x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 44.824 [mm]

EXIF ID: _0.0_612x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	481.890 [pixel] 20.000 [mm]	306.000 [pixel] 12.700 [mm]	540.000 [pixel] 22.412 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1636.279 [pixel] 67.911 [mm]	251.814 [pixel] 10.451 [mm]	989.146 [pixel] 41.053 [mm]	-0.086	-1.794	7.442	-0.006	-0.000
Uncertainties (Sigma)	16.916 [pixel] 0.702 [mm]	8.537 [pixel] 0.354 [mm]	11.556 [pixel] 0.480 [mm]	0.048	0.635	3.000	0.002	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

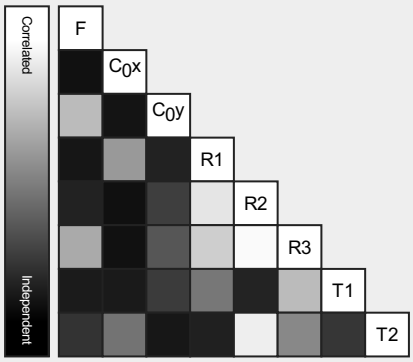
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_582x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 47.134 [mm]

EXIF ID: _0.0_582x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	458.268 [pixel] 20.000 [mm]	291.000 [pixel] 12.700 [mm]	540.000 [pixel] 23.567 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1628.489 [pixel] 71.072 [mm]	241.142 [pixel] 10.524 [mm]	994.975 [pixel] 43.423 [mm]	0.019	-2.594	9.788	-0.003	0.000
Uncertainties (Sigma)	16.921 [pixel] 0.738 [mm]	10.196 [pixel] 0.445 [mm]	13.266 [pixel] 0.579 [mm]	0.062	0.815	3.775	0.003	0.001



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The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

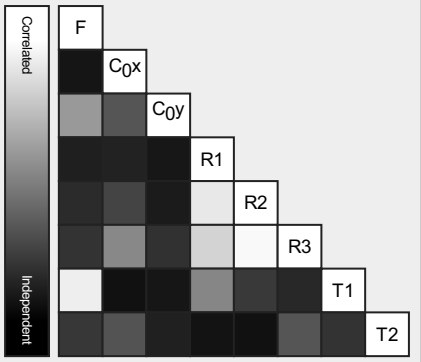
Internal Camera Parameters

_0.0_615x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 44.605 [mm]

EXIF ID: _0.0_615x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	484.252 [pixel] 20.000 [mm]	307.500 [pixel] 12.700 [mm]	540.000 [pixel] 22.302 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1627.558 [pixel] 67.219 [mm]	268.046 [pixel] 11.071 [mm]	1026.690 [pixel] 42.403 [mm]	-0.144	0.172	-1.646	0.004	-0.001

Uncertainties (Sigma)	16.832 [pixel] 0.695 [mm]	7.332 [pixel] 0.303 [mm]	11.749 [pixel] 0.485 [mm]	0.043	0.454	1.796	0.002	0.001



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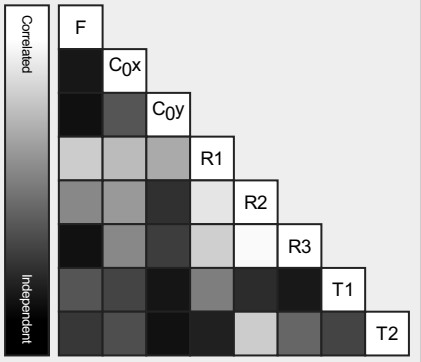
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_588x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 46.653 [mm]

EXIF ID: _0.0_588x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	462.992 [pixel] 20.000 [mm]	294.000 [pixel] 12.700 [mm]	540.000 [pixel] 23.327 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1622.059 [pixel] 70.069 [mm]	257.415 [pixel] 11.120 [mm]	1026.988 [pixel] 44.363 [mm]	-0.023	-1.343	4.399	0.004	-0.001
Uncertainties (Sigma)	16.722 [pixel] 0.722 [mm]	7.397 [pixel] 0.320 [mm]	11.532 [pixel] 0.498 [mm]	0.042	0.476	1.954	0.002	0.001



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The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

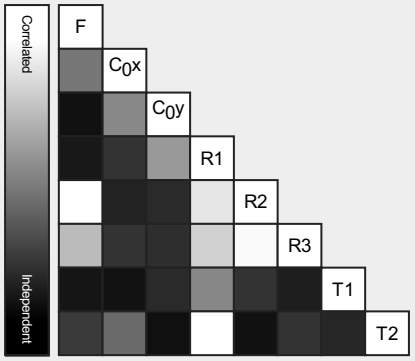
Internal Camera Parameters

_0.0_537x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 51.084 [mm]

EXIF ID: _0.0_537x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	422.835 [pixel] 20.000 [mm]	268.500 [pixel] 12.700 [mm]	540.000 [pixel] 25.542 [mm]	0.000	0.000	0.000	0.000	0.000

Optimized Values	1626.096 [pixel] 76.914 [mm]	240.871 [pixel] 11.393 [mm]	1019.821 [pixel] 48.237 [mm]	-0.054	-1.164	3.535	0.001	0.001
Uncertainties (Sigma)	16.927 [pixel] 0.801 [mm]	9.457 [pixel] 0.447 [mm]	13.767 [pixel] 0.651 [mm]	0.056	0.639	2.690	0.003	0.001



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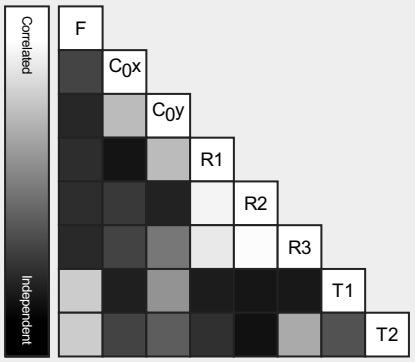
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_354x942 (RGB). Sensor Dimensions: 25.400 [mm] x 67.590 [mm]

EXIF ID: _0.0_354x942

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	278.740 [pixel] 20.000 [mm]	177.000 [pixel] 12.700 [mm]	471.000 [pixel] 33.795 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1624.434 [pixel] 116.555 [mm]	-144.069 [pixel] -10.337 [mm]	617.426 [pixel] 44.301 [mm]	-0.678	3.655	-13.077	-0.015	0.012
Uncertainties (Sigma)	17.835 [pixel] 1.280 [mm]	24.454 [pixel] 1.755 [mm]	17.549 [pixel] 1.259 [mm]	0.121	2.022	10.727	0.002	0.003



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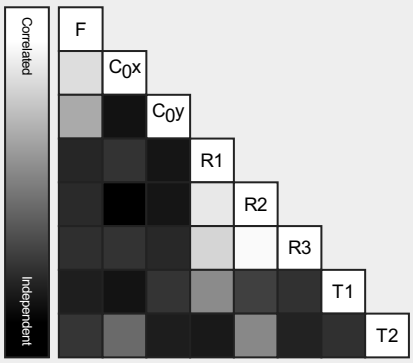
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_597x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 45.950 [mm]

EXIF ID: _0.0_597x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	470.079 [pixel] 20.000 [mm]	298.500 [pixel] 12.700 [mm]	540.000 [pixel] 22.975 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1630.446 [pixel] 69.369 [mm]	251.415 [pixel] 10.697 [mm]	1013.695 [pixel] 43.129 [mm]	-0.138	0.184	-1.842	0.004	-0.001
Uncertainties (Sigma)	17.064 [pixel] 0.726 [mm]	8.435 [pixel] 0.359 [mm]	13.868 [pixel] 0.590 [mm]	0.054	0.622	2.633	0.003	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

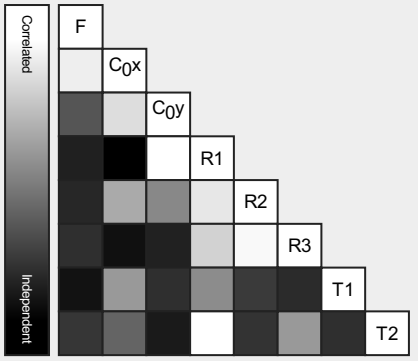
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_642x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 42.729 [mm]

EXIF ID: _0.0_642x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	505.512 [pixel] 20.000 [mm]	321.000 [pixel] 12.700 [mm]	540.000 [pixel] 21.364 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1625.756 [pixel] 64.321 [mm]	294.067 [pixel] 11.634 [mm]	1031.686 [pixel] 40.817 [mm]	-0.129	0.000	-1.338	0.003	-0.001
Uncertainties (Sigma)	16.881 [pixel] 0.668 [mm]	8.877 [pixel] 0.351 [mm]	13.373 [pixel] 0.529 [mm]	0.048	0.492	1.886	0.003	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

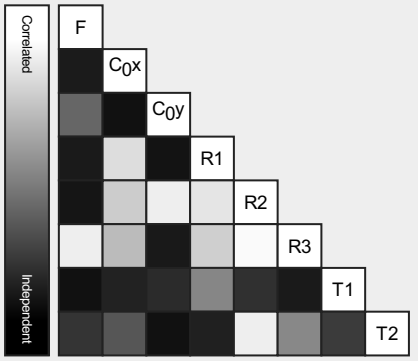
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_660x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 41.564 [mm]

EXIF ID: _0.0_660x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	519.685 [pixel] 20.000 [mm]	330.000 [pixel] 12.700 [mm]	540.000 [pixel] 20.782 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1624.243 [pixel] 62.509 [mm]	272.346 [pixel] 10.481 [mm]	1032.216 [pixel] 39.725 [mm]	-0.082	-0.798	2.457	0.003	-0.000
Uncertainties (Sigma)	16.842 [pixel] 0.648 [mm]	8.014 [pixel] 0.308 [mm]	12.628 [pixel] 0.486 [mm]	0.046	0.475	1.817	0.002	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

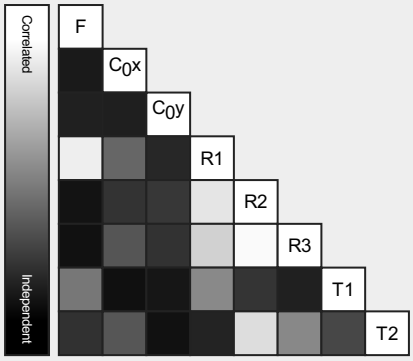
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_596x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 46.027 [mm]

EXIF ID: _0.0_596x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	469.291 [pixel] 20.000 [mm]	298.000 [pixel] 12.700 [mm]	540.000 [pixel] 23.013 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1600.557 [pixel] 68.212 [mm]	251.760 [pixel] 10.729 [mm]	1080.390 [pixel] 46.043 [mm]	0.033	-0.855	1.775	0.017	-0.001
Uncertainties (Sigma)	16.432 [pixel] 0.700 [mm]	7.164 [pixel] 0.305 [mm]	12.405 [pixel] 0.529 [mm]	0.042	0.374	1.248	0.002	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

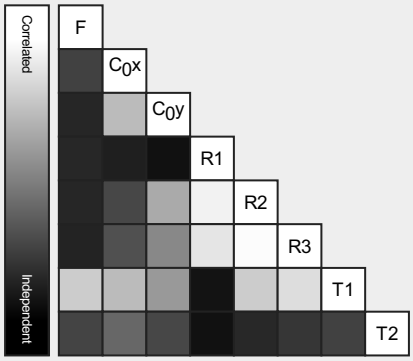
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_351x972 (RGB). Sensor Dimensions: 25.400 [mm] x 70.338 [mm]

EXIF ID: _0.0_351x972

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	276.378 [pixel] 20.000 [mm]	175.500 [pixel] 12.700 [mm]	486.000 [pixel] 35.169 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1635.524 [pixel] 118.354 [mm]	-114.909 [pixel] -8.315 [mm]	631.696 [pixel] 45.712 [mm]	-0.692	3.758	-13.404	-0.014	0.009
Uncertainties (Sigma)	17.789 [pixel] 1.287 [mm]	23.021 [pixel] 1.666 [mm]	16.638 [pixel] 1.204 [mm]	0.111	1.987	10.981	0.002	0.003



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

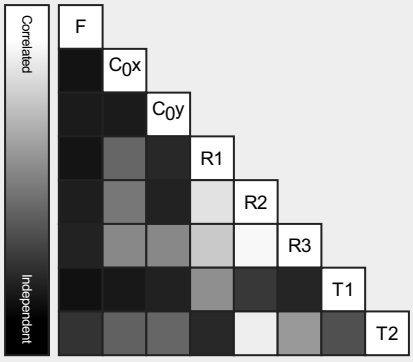
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_556x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 49.338 [mm]

EXIF ID: _0.0_556x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	437.795 [pixel] 20.000 [mm]	278.000 [pixel] 12.700 [mm]	540.000 [pixel] 24.669 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1600.071 [pixel] 73.097 [mm]	247.292 [pixel] 11.297 [mm]	1070.399 [pixel] 48.900 [mm]	-0.007	-0.321	-0.116	0.017	-0.001
Uncertainties (Sigma)	16.468 [pixel] 0.752 [mm]	7.427 [pixel] 0.339 [mm]	13.122 [pixel] 0.599 [mm]	0.044	0.396	1.372	0.002	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

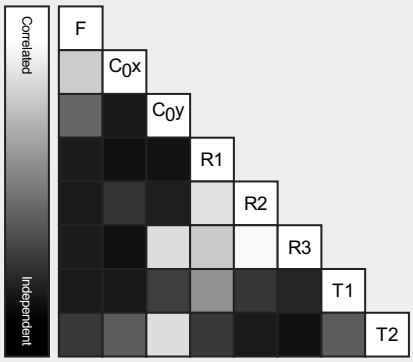
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_527x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 52.053 [mm]

EXIF ID: _0.0_527x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	414.961 [pixel] 20.000 [mm]	263.500 [pixel] 12.700 [mm]	540.000 [pixel] 26.027 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1610.003 [pixel] 77.598 [mm]	228.322 [pixel] 11.005 [mm]	1042.101 [pixel] 50.226 [mm]	-0.052	-0.343	0.145	0.010	-0.001
Uncertainties (Sigma)	16.810 [pixel] 0.810 [mm]	8.185 [pixel] 0.394 [mm]	14.187 [pixel] 0.684 [mm]	0.049	0.494	1.898	0.003	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

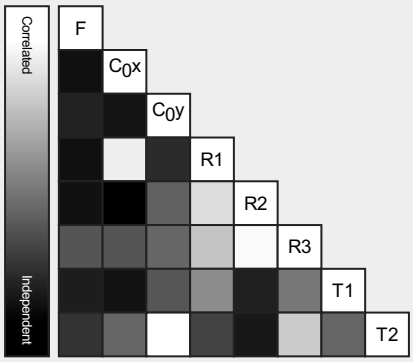
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_511x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 53.683 [mm]

EXIF ID: _0.0_511x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	402.362 [pixel] 20.000 [mm]	255.500 [pixel] 12.700 [mm]	540.000 [pixel] 26.841 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1609.075 [pixel] 79.981 [mm]	219.641 [pixel] 10.918 [mm]	1025.375 [pixel] 50.968 [mm]	0.031	-1.320	3.674	0.009	-0.003
Uncertainties (Sigma)	16.817 [pixel] 0.836 [mm]	8.784 [pixel] 0.437 [mm]	15.179 [pixel] 0.754 [mm]	0.053	0.554	2.193	0.003	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

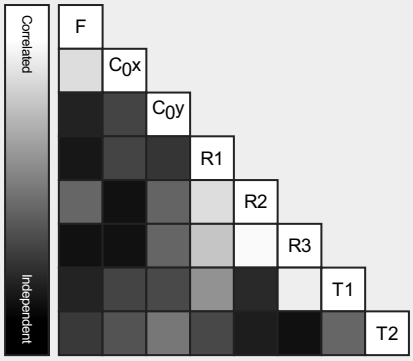
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_454x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 60.423 [mm]

EXIF ID: _0.0_454x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	357.480 [pixel] 20.000 [mm]	227.000 [pixel] 12.700 [mm]	540.000 [pixel] 30.211 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1614.560 [pixel] 90.330 [mm]	180.429 [pixel] 10.094 [mm]	1014.821 [pixel] 56.776 [mm]	-0.029	-1.199	3.362	0.002	-0.002
Uncertainties (Sigma)	16.966 [pixel] 0.949 [mm]	10.061 [pixel] 0.563 [mm]	16.431 [pixel] 0.919 [mm]	0.061	0.647	2.637	0.003	0.001



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

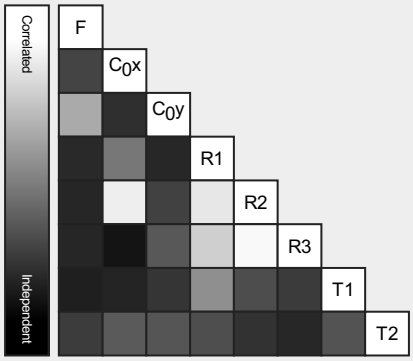
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_419x1080 (RGB). Sensor Dimensions: 25.400 [mm] x 65.470 [mm]

EXIF ID: _0.0_419x1080

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	329.921 [pixel] 20.000 [mm]	209.500 [pixel] 12.700 [mm]	540.000 [pixel] 32.735 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1632.379 [pixel] 98.956 [mm]	157.280 [pixel] 9.534 [mm]	923.070 [pixel] 55.957 [mm]	-0.314	1.124	-6.500	-0.016	0.006
Uncertainties (Sigma)	17.092 [pixel] 1.036 [mm]	15.764 [pixel] 0.956 [mm]	17.589 [pixel] 1.066 [mm]	0.076	1.170	6.608	0.003	0.002



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

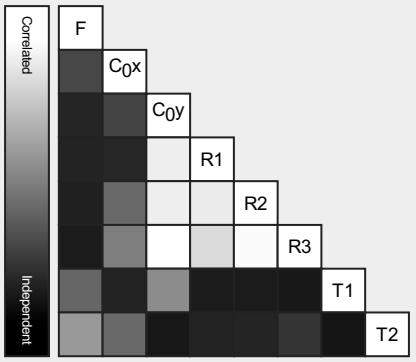
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_388x1008 (RGB). Sensor Dimensions: 25.400 [mm] x 65.988 [mm]

EXIF ID: _0.0_388x1008

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	305.512 [pixel] 20.000 [mm]	194.000 [pixel] 12.700 [mm]	504.000 [pixel] 32.994 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1653.702 [pixel] 108.258 [mm]	-131.078 [pixel] -8.581 [mm]	608.617 [pixel] 39.842 [mm]	-0.706	4.380	-15.558	-0.009	0.004
Uncertainties (Sigma)	18.032 [pixel] 1.180 [mm]	22.247 [pixel] 1.456 [mm]	14.593 [pixel] 0.955 [mm]	0.088	1.417	7.041	0.002	0.003



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

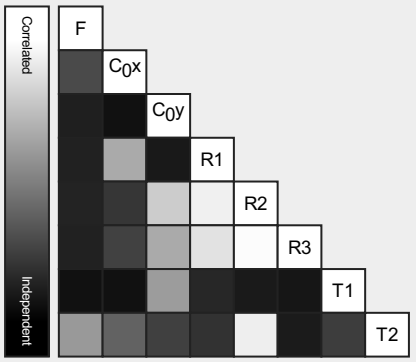
The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

Internal Camera Parameters

_0.0_422x1033 (RGB). Sensor Dimensions: 25.400 [mm] x 62.176 [mm]

EXIF ID: _0.0_422x1033

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	332.283 [pixel] 20.000 [mm]	211.000 [pixel] 12.700 [mm]	516.500 [pixel] 31.088 [mm]	0.000	0.000	0.000	0.000	0.000
Optimized Values	1645.193 [pixel] 99.023 [mm]	-120.351 [pixel] -7.244 [mm]	639.706 [pixel] 38.504 [mm]	-0.610	2.637	-7.791	-0.011	0.008
Uncertainties (Sigma)	17.727 [pixel] 1.067 [mm]	21.131 [pixel] 1.272 [mm]	16.092 [pixel] 0.969 [mm]	0.080	1.155	5.311	0.002	0.003



The correlation between camera internal parameters determined by the bundle adjustment. White indicates a full correlation between the parameters, ie. any change in one can be fully compensated by the other. Black indicates that the parameter is completely independent, and is not affected by other parameters.

The number of Automatic Tie Points (ATPs) per pixel, averaged over all images of the camera model, is color coded between black and white. White indicates that, on average, more than 16 ATPs have been extracted at the pixel location. Black indicates that, on average, 0 ATPs have been extracted at the pixel location. Click on the image to the see the average direction and magnitude of the re-projection error for each pixel. Note that the vectors are scaled for better visualization. The scale bar indicates the magnitude of 1 pixel error.

2D Keypoints Table

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3423	1180
Min	869	84
Max	4843	1657
Mean	3380	1085

2D Keypoints Table for Camera _0.0_153x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	869	0
Min	869	85
Max	869	85
Mean	869	85

2D Keypoints Table for Camera _0.0_247x996 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	1371	0
Min	1371	84
Max	1371	84
Mean	1371	84

2D Keypoints Table for Camera _0.0_390x976 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2262	0
Min	2262	806
Max	2262	806
Mean	2262	806

2D Keypoints Table for Camera _0.0_387x888 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2034	0
Min	2034	708
Max	2034	708
Mean	2034	708

2D Keypoints Table for Camera _0.0_438x1035 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2721	0
Min	2721	1027
Max	2721	1027
Mean	2721	1027

2D Keypoints Table for Camera _0.0_477x1032 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2904	0
Min	2904	964
Max	2904	964
Mean	2904	964

2D Keypoints Table for Camera _0.0_432x991 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2481	0
Min	2481	950
Max	2481	950
Mean	2481	950

2D Keypoints Table for Camera _0.0_387x1016 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2283	0
Min	2283	825

Max	2283	825
Mean	2283	825

2D Keypoints Table for Camera _0.0_414x1057 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2597	0
Min	2597	980
Max	2597	980
Mean	2597	980

2D Keypoints Table for Camera _0.0_441x1035 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2592	0
Min	2592	886
Max	2592	886
Mean	2592	886

2D Keypoints Table for Camera _0.0_411x999 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2370	0
Min	2370	741
Max	2370	741
Mean	2370	741

2D Keypoints Table for Camera _0.0_444x1051 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2692	0
Min	2692	761
Max	2692	761
Mean	2692	761

2D Keypoints Table for Camera _0.0_265x960 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	1485	0
Min	1485	285
Max	1485	285
Mean	1485	285

2D Keypoints Table for Camera _0.0_453x1061 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2802	0
Min	2802	998
Max	2802	998
Mean	2802	998

2D Keypoints Table for Camera _0.0_426x1044 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2515	0
Min	2515	890
Max	2515	890
Mean	2515	890

2D Keypoints Table for Camera _0.0_429x1058 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2605	0
Min	2605	1039
Max	2605	1039
Mean	2605	1039

2D Keypoints Table for Camera _0.0_450x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2858	0
Min	2774	933
Max	2858	974
Mean	2816	954

2D Keypoints Table for Camera _0.0_456x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3432	0
Min	2820	930
Max	3432	1330
Mean	3126	1130

2D Keypoints Table for Camera _0.0_462x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2901	0
Min	2901	935
Max	2901	935
Mean	2901	935

2D Keypoints Table for Camera _0.0_474x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3121	0
Min	3121	1041
Max	3121	1041
Mean	3121	1041

2D Keypoints Table for Camera _0.0_468x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3032	0
Min	3025	1083
Max	3032	1098
Mean	3029	1091

2D Keypoints Table for Camera _0.0_283x995 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	1698	0
Min	1698	428
Max	1698	428
Mean	1698	428

2D Keypoints Table for Camera _0.0_501x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3423	0
Min	3244	1030
Max	3423	1054
Mean	3334	1042

2D Keypoints Table for Camera _0.0_513x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3300	0
Min	3300	1039
Max	3300	1039
Mean	3300	1039

2D Keypoints Table for Camera _0.0_510x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3332	0
Min	3332	1032
Max	3332	1032
Mean	3332	1032

2D Keypoints Table for Camera _0.0_504x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3264	0
Min	3264	935
Max	3264	935
Mean	3264	935

2D Keypoints Table for Camera _0.0_525x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3720	0
Min	3444	1046
Max	3720	1051
Mean	3582	1049

2D Keypoints Table for Camera _0.0_486x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3184	0
Min	3184	964
Max	3184	964
Mean	3184	964

2D Keypoints Table for Camera _0.0_522x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3522	0
Min	3522	1043
Max	3522	1043
Mean	3522	1043

2D Keypoints Table for Camera _0.0_519x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3502	0
Min	3502	977
Max	3502	977
Mean	3502	977

2D Keypoints Table for Camera _0.0_320x1030 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	1933	0
Min	1933	590
Max	1933	590

Mean	1933	590

2D Keypoints Table for Camera _0.0_546x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4024	0
Min	4024	938
Max	4024	938
Mean	4024	938

2D Keypoints Table for Camera _0.0_528x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4031	0
Min	4031	712
Max	4031	712
Mean	4031	712

2D Keypoints Table for Camera _0.0_570x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4272	1277
Min	4268	1176
Max	4565	1277
Mean	4368	1236

2D Keypoints Table for Camera _0.0_555x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4253	0
Min	3974	1194
Max	4253	1220
Mean	4114	1207

2D Keypoints Table for Camera _0.0_558x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4061	0
Min	3775	1207
Max	4061	1223
Mean	3918	1215

2D Keypoints Table for Camera _0.0_606x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4384	0
Min	4384	1263
Max	4384	1263
Mean	4384	1263

2D Keypoints Table for Camera _0.0_573x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4324	0
Min	4324	1163
Max	4324	1163
Mean	4324	1163

2D Keypoints Table for Camera _0.0_579x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4456	0
Min	4456	1297
Max	4456	1297
Mean	4456	1297

2D Keypoints Table for Camera _0.0_621x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4730	0
Min	4427	1270
Max	4730	1479
Mean	4579	1375

2D Keypoints Table for Camera _0.0_343x967 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	1958	0
Min	1958	692
Max	1958	692
Mean	1958	692

2D Keypoints Table for Camera _0.0_627x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4818	0
Min	4818	1380
Max	4818	1380
Mean	4818	1380

2D Keypoints Table for Camera _0.0_639x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4843	0
Min	4843	1369
Max	4843	1369
Mean	4843	1369

2D Keypoints Table for Camera _0.0_594x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4685	0
Min	4266	1311
Max	4685	1469
Mean	4476	1390

2D Keypoints Table for Camera _0.0_612x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4830	0
Min	4325	1385
Max	4830	1443
Mean	4578	1414

2D Keypoints Table for Camera _0.0_582x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4491	0
Min	4491	1311
Max	4491	1311
Mean	4491	1311

2D Keypoints Table for Camera _0.0_615x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4767	0
Min	4045	1345
Max	4767	1419
Mean	4406	1382

2D Keypoints Table for Camera _0.0_588x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4286	0
Min	3758	1400
Max	4286	1538
Mean	4022	1469

2D Keypoints Table for Camera _0.0_537x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3399	0
Min	3399	1325
Max	3399	1325
Mean	3399	1325

2D Keypoints Table for Camera _0.0_354x942 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2072	0
Min	2072	805
Max	2072	805
Mean	2072	805

2D Keypoints Table for Camera _0.0_597x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3908	0
Min	3908	1450
Max	3908	1450
Mean	3908	1450

2D Keypoints Table for Camera _0.0_642x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4418	0
Min	4418	1380
Max	4418	1380
Mean	4418	1380

2D Keypoints Table for Camera _0.0_660x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4782	0
Min	4782	1657
Max	4782	1657
Mean	4782	1657

2D Keypoints Table for Camera _0.0_596x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4266	0
Min	4266	1542
Max	4266	1542

Mean	4266	1542

2D Keypoints Table for Camera _0.0_351x972 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2074	0
Min	2074	796
Max	2074	796
Mean	2074	796

2D Keypoints Table for Camera _0.0_556x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	4116	0
Min	4116	1607
Max	4116	1607
Mean	4116	1607

2D Keypoints Table for Camera _0.0_527x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3826	0
Min	3826	1528
Max	3826	1528
Mean	3826	1528

2D Keypoints Table for Camera _0.0_511x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3763	0
Min	3763	1517
Max	3763	1517
Mean	3763	1517

2D Keypoints Table for Camera _0.0_454x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3376	0
Min	3376	1381
Max	3376	1381
Mean	3376	1381

2D Keypoints Table for Camera _0.0_419x1080 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	3113	0
Min	3113	1269
Max	3113	1269
Mean	3113	1269

2D Keypoints Table for Camera _0.0_388x1008 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2448	0
Min	2448	950
Max	2448	950
Mean	2448	950

2D Keypoints Table for Camera _0.0_422x1033 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	2609	0
Min	2609	970
Max	2609	970
Mean	2609	970

Median / 75%/ Maximal Number of Matches Between Camera Models

	_0.0_153x1080 (RGB)	_0.0_247x996 (RGB)	_0.0_390x976 (RGB)	_0.0_387x888 (RGB)	_0.0_438x1035 (RGB)	_0.0_477x1032 (RGB)	_0.0_432x991 (RGB)	_0.0_387x1016 (RGB)	_0.0_414x1057 (RGB)	_0.0_441x1035 (RGB)	_0.0_411x (RGB)
_0.0_153x1080 (RGB)		(n/a) / (n/a) / 8	(n/a) / (n/a) / 10	(n/a) / (n/a) / 11	(n/a) / (n/a) / 10	(n/a) / (n/a) / 11	(n/a) / (n/a) / 11	(n/a) / (n/a) / 7	(n/a) / (n/a) / 7	(n/a) / (n/a) / 7	(n/a) / (n/a
_0.0_247x996 (RGB)			(n/a) / (n/a) / 16	(n/a) / (n/a) / 17	(n/a) / (n/a) / 12	(n/a) / (n/a) / 12	(n/a) / (n/a) / 15	(n/a) / (n/a) / 13	(n/a) / (n/a) / 18	(n/a) / (n/a) / 14	(n/a) / (n/a 12
_0.0_390x976 (RGB)				(n/a) / (n/a) / 469	(n/a) / (n/a) / 400	(n/a) / (n/a) / 329	(n/a) / (n/a) / 288	(n/a) / (n/a) / 243	(n/a) / (n/a) / 217	(n/a) / (n/a) / 192	(n/a) / (n/a 159
_0.0_387x888 (RGB)					(n/a) / (n/a) / 361	(n/a) / (n/a) / 304	(n/a) / (n/a) / 265	(n/a) / (n/a) / 215	(n/a) / (n/a) / 189	(n/a) / (n/a) / 175	(n/a) / (n/a 133
_0.0_438x1035 (RGB)						(n/a) / (n/a) / 690	(n/a) / (n/a) / 450	(n/a) / (n/a) / 344	(n/a) / (n/a) / 335	(n/a) / (n/a) / 278	(n/a) / (n/a 210
_0.0_477x1032 (RGB)							(n/a) / (n/a) / 446	(n/a) / (n/a) / 358	(n/a) / (n/a) / 339	(n/a) / (n/a) / 306	(n/a) / (n/a 227
_0.0_432x991 (RGB)								(n/a) / (n/a) / 579	(n/a) / (n/a) / 474	(n/a) / (n/a) / 394	(n/a) / (n/a 291
_0.0_387x1016 (RGB)									(n/a) / (n/a) / 444	(n/a) / (n/a) / 384	(n/a) / (n/a 287
_0.0_414x1057 (RGB)										(n/a) / (n/a) / 632	(n/a) / (n/a 423
_0.0_441x1035 (RGB)											(n/a) / (n/a 410
_0.0_411x999 (RGB)											
_0.0_444x1051 (RGB)											
_0.0_265x960 (RGB)											
_0.0_453x1061 (RGB)											

_0.0_426x1044 (RGB)											
_0.0_429x1058 (RGB)											
_0.0_450x1080 (RGB)											
_0.0_456x1080 (RGB)											
_0.0_462x1080 (RGB)											
_0.0_474x1080 (RGB)											
_0.0_468x1080 (RGB)											
_0.0_283x995 (RGB)											
_0.0_501x1080 (RGB)											
_0.0_513x1080 (RGB)											
_0.0_510x1080 (RGB)											
_0.0_504x1080 (RGB)											
_0.0_525x1080 (RGB)											
_0.0_486x1080 (RGB)											
_0.0_522x1080 (RGB)											
_0.0_519x1080 (RGB)											
_0.0_320x1030 (RGB)											
_0.0_546x1080 (RGB)											
_0.0_528x1080 (RGB)											
_0.0_570x1080 (RGB)											
_0.0_555x1080 (RGB)											
_0.0_558x1080 (RGB)											
_0.0_606x1080 (RGB)											
_0.0_573x1080 (RGB)											
_0.0_579x1080 (RGB)											
_0.0_621x1080 (RGB)											
_0.0_343x967 (RGB)											
_0.0_627x1080 (RGB)											
_0.0_639x1080 (RGB)											
_0.0_594x1080 (RGB)											
_0.0_612x1080 (RGB)											
_0.0_582x1080 (RGB)											
_0.0_615x1080 (RGB)											
_0.0_588x1080 (RGB)											
_0.0_537x1080 (RGB)											
_0.0_354x942 (RGB)											
_0.0_597x1080 (RGB)											
_0.0_642x1080 (RGB)											
_0.0_660x1080 (RGB)											
_0.0_596x1080 (RGB)											
_0.0_351x972 (RGB)											
_0.0_556x1080 (RGB)											
_0.0_527x1080 (RGB)											
_0.0_511x1080 (RGB)											
_0.0_454x1080 (RGB)											
_0.0_419x1080 (RGB)											
_0.0_166x1037 (RGB)											
_0.0_388x1008 (RGB)											
_0.0_422x1033 (RGB)											

3D Points from 2D Keypoint Matches

	Number of 3D Points Observed
In 2 Images	14627
In 3 Images	3151
In 4 Images	1893
In 5 Images	931
In 6 Images	695
In 7 Images	473
In 8 Images	407
In 9 Images	287

In 10 Images	233
In 11 Images	166
In 12 Images	132
In 13 Images	118
In 14 Images	98
In 15 Images	70
In 16 Images	74
In 17 Images	50
In 18 Images	42
In 19 Images	45
In 20 Images	32
In 21 Images	31
In 22 Images	25
In 23 Images	20
In 24 Images	21
In 25 Images	12
In 26 Images	13
In 27 Images	6
In 28 Images	7
In 29 Images	11
In 30 Images	5
In 31 Images	3
In 32 Images	5
In 34 Images	1
In 35 Images	3
In 36 Images	2
In 37 Images	1
In 43 Images	1
In 45 Images	1

2D Keypoint Matches

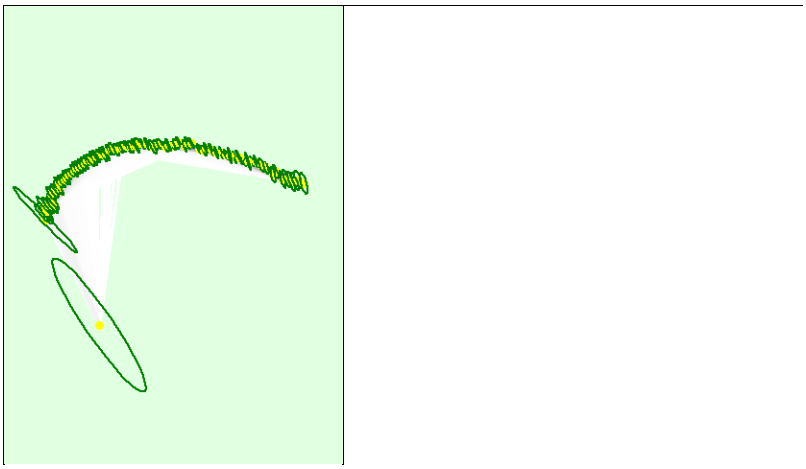


Figure 5: Computed image positions with links between matched images. The darkness of the links indicates the number of matched 2D keypoints between the images. Bright links indicate weak links and require manual tie points or more images. Dark green ellipses indicate the relative camera position uncertainty of the bundle block adjustment result.

Relative camera position and orientation uncertainties

	X [m]	Y [m]	Z [m]	Omega [degree]	Phi [degree]	Kappa [degree]
Mean	0.058	0.057	0.098	0.374	0.511	0.334
Sigma	0.076	0.076	0.099	0.070	0.111	0.234

Initial Processing Details

System Information

Hardware	CPU: Intel(R) Xeon(R) W-2245 CPU @ 3.90GHz RAM: 160GB GPU: NVIDIA GeForce RTX 2070 SUPER (Driver: 26.21.14.4575)
Operating System	Windows 10 Enterprise, 64-bit

Coordinate Systems

Output Coordinate System	Arbitrary (m)

Processing Options

Detected Template	3D Models - Rapid/Low Res
Keypoints Image Scale	Rapid, Image Scale: 1
Advanced: Matching Image Pairs	Free Flight or Terrestrial
Advanced: Matching Strategy	Use Geometrically Verified Matching: no
Advanced: Keypoint Extraction	Targeted Number of Keypoints: Automatic
Advanced: Calibration	Calibration Method: Standard Internal Parameters Optimization: All External Parameters Optimization: All Rematch: Auto, yes

Point Cloud Densification details

Processing Options

Image Scale	1/4 (Quarter image size, Fast)
Point Density	Low (Fast)
Minimum Number of Matches	3
3D Textured Mesh Generation	yes
3D Textured Mesh Settings:	Resolution: Medium Resolution (default) Color Balancing: no
LOD	Generated: no
Advanced: 3D Textured Mesh Settings	Sample Density Divider: 1
Advanced: Image Groups	group1
Advanced: Use Processing Area	yes
Advanced: Use Annotations	yes
Time for Point Cloud Densification	01m:04s
Time for Point Cloud Classification	NA
Time for 3D Textured Mesh Generation	04s

Results

Number of Generated Tiles	1
Number of 3D Densified Points	4695
Average Density (per m^3)	0.37