

CORONA photogrammetry triangulation reports

Sahlan-Hammam canal

The Triangulation Report With LPS

The output image x, y units: pixels

The output angle unit: degrees

The output ground X, Y, Z units: meters

The Input Image Coordinates

image ID = 1

Point ID	x	y			
1	414.054	211.230	20	94.206	99.409
3	224.243	170.064	21	99.845	248.360
4	367.052	452.858	22	79.945	341.607
5	26.043	435.888	23	77.901	401.903
6	343.347	27.085	24	238.461	396.047
7	311.067	417.943	25	173.934	413.197
8	265.362	353.034	26	188.815	315.025
9	165.282	37.852	27	251.662	209.205
10	315.569	182.338	28	187.522	75.337
11	392.999	127.403	29	221.088	67.975
12	258.089	72.081	30	211.864	132.711
13	277.984	252.971	31	314.215	106.277
14	323.438	323.965	32	359.033	277.592
15	369.918	394.774	33	396.000	122.765
16	366.030	224.843	34	337.631	149.226
17	368.665	63.261	35	349.623	159.979
18	293.466	12.171	36	318.930	182.994
19	57.341	148.968	37	394.805	232.646

Affine coefficients from file (pixels) to film (millimeters)

A0	A1	A2	B0	B1	B2	
-1.5890	-0.000000	0.007000	-1.4840	0.007000	0.000000	

image ID = 2

Point ID	x	y			
1	426.881	282.205	20	100.136	106.975
3	236.148	208.000	21	120.199	264.108
4	409.827	525.925	22	114.174	356.960
5	74.801	449.891	23	120.809	420.419
6	336.245	77.210	24	279.304	445.209
7	352.183	479.155	25	217.915	449.686
8	299.985	405.277	26	219.453	349.365
9	161.263	56.164	27	265.139	253.879
10	327.599	234.313	28	188.093	99.588
11	396.150	191.394	29	218.997	97.112
12	254.016	107.975	30	221.720	169.793
13	297.630	299.283	31	312.994	158.037
14	351.559	382.716	32	380.940	341.890
15	406.440	467.118	33	398.736	186.919
16	382.282	286.995	34	344.898	204.068
17	364.245	120.295	35	373.308	227.289
18	283.804	53.941	36	330.736	235.060
19	69.267	153.068	37	409.997	302.076

Affine coefficients from file (pixels) to film (millimeters)

A0	A1	A2	B0	B1	B2	
-1.8515	0.000000	0.007000	-1.6590	0.007000	0.000000	

THE OUTPUT OF SELF-CALIBRATING BUNDLE BLOCK ADJUSTMENT

the no. of iteration =1 the standard error = 1.8861
the maximal correction of the object points = 0.00000

the no. of iteration =2 the standard error = 1.8861
the maximal correction of the object points = 0.00000

The exterior orientation parameters

image ID	Xs	Ys	Zs	OMEGA	PHI	KAPPA
1	397452.1731	4071491.4483	150784.0732	-372.5057	-394.6698	-442.1647
2	599534.3642	4089909.0019	-153841.3970	198.5702	-509.5860	-72.3136

The interior orientation parameters of photos

image ID	f(mm)	xo(mm)	yo(mm)
1	609.6020	0.0000	0.0000
2	609.6020	0.0000	0.0000

The residuals of the control points

Point ID	rX	rY	rZ
All residuals of fixed GCP are zero.			

The difference of intersected and measured control points

Point ID	rX	rY	rZ				
1	-3.1533	-5.4838	0.7860	20	-8.9578	-0.2793	10.4156
3	3.2235	4.9718	-9.6947	21	1.1453	0.2344	1.4776
4	-0.1518	0.1848	5.0720	22	-6.2930	-1.5689	4.5538
5	12.9581	-2.0258	-9.0979	23	-1.1280	-4.7917	0.3282
6	-0.7512	-2.0166	-0.0819	24	1.6509	2.7550	-4.6475
7	-1.9849	0.3937	2.9420	25	-0.0886	-2.3291	-0.2875
8	1.4933	5.0958	-4.6816	26	0.6935	2.8766	5.3408
9	-2.0992	-0.2702	3.0583	27	6.8975	-1.3628	-11.3525
10	-4.9653	-3.3135	4.0855	28	-3.7461	2.7869	3.1177
11	-1.3827	-3.9330	2.0009	29	-0.4827	1.4436	6.8583
12	-3.6289	-0.1197	3.0769	30	12.2168	1.8916	-19.6087
13	-10.1188	-0.1759	7.4889	31	9.8716	1.5551	-12.3730
14	-3.1035	2.0583	5.8925	32	-2.4705	0.4247	-2.2383
15	-4.7739	-0.1847	-1.9817	33	-1.4948	-0.4971	1.1080
16	-0.8648	-0.6031	5.2139	34	-1.2230	-0.2027	1.7742
17	3.9999	-2.9323	-1.5682	35	16.1600	7.2757	2.4685
18	-0.9565	-0.8072	-4.5649	36	-3.2768	-0.3132	5.2297
19	-3.5392	-0.2034	4.1278	37	0.2830	-0.5348	-4.1754

aX	aY	aZ
-0.0012	-0.0000	0.0018
mX	mY	mZ
5.5780	2.6244	6.2376
CE90	LE90	
8.9260	10.3969	

The image residuals of intersected GCP

Point	Image	Vx	Vy				
1	1	-0.729	-0.087	3	1	0.223	0.029
1	2	0.737	-0.005	3	2	-0.226	-0.001
Point	Image	Vx	Vy	Point	Image	Vx	Vy

4	1	-1.049	-0.126
4	2	1.060	-0.006

Point	Image	Vx	Vy
5	1	0.529	0.072
5	2	-0.539	-0.006

Point	Image	Vx	Vy
6	1	0.395	0.049
6	2	-0.400	0.001

Point	Image	Vx	Vy
7	1	0.000	0.000
7	2	-0.000	0.000

Point	Image	Vx	Vy
8	1	0.509	0.064
8	2	-0.516	0.000

Point	Image	Vx	Vy
9	1	-0.039	-0.005
9	2	0.039	0.000

Point	Image	Vx	Vy
10	1	0.140	0.017
10	2	-0.142	0.000

Point	Image	Vx	Vy
11	1	-0.443	-0.054
11	2	0.448	-0.002

Point	Image	Vx	Vy
12	1	-1.436	-0.184
12	2	1.456	0.003

Point	Image	Vx	Vy
13	1	-0.672	-0.084
13	2	0.681	-0.000

Point	Image	Vx	Vy
14	1	-0.573	-0.070
14	2	0.579	-0.002

Point	Image	Vx	Vy
15	1	-0.545	-0.066
15	2	0.551	-0.003

Point	Image	Vx	Vy
16	1	-0.104	-0.013
16	2	0.106	-0.000

Point	Image	Vx	Vy
17	1	-0.363	-0.044
17	2	0.367	-0.001

Point	Image	Vx	Vy
18	1	-0.274	-0.035
18	2	0.277	0.000

Point	Image	Vx	Vy
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19	1	0.076	0.010
19	2	-0.077	-0.001

Point	Image	Vx	Vy
20	1	0.481	0.065
20	2	-0.490	-0.005

Point	Image	Vx	Vy
21	1	-1.417	-0.191
21	2	1.441	0.012

Point	Image	Vx	Vy
22	1	-0.427	-0.058
22	2	0.434	0.004

Point	Image	Vx	Vy
23	1	0.173	0.023
23	2	-0.176	-0.001

Point	Image	Vx	Vy
24	1	0.769	0.097
24	2	-0.780	-0.001

Point	Image	Vx	Vy
25	1	0.809	0.105
25	2	-0.821	-0.003

Point	Image	Vx	Vy
26	1	0.335	0.043
26	2	-0.340	-0.001

Point	Image	Vx	Vy
27	1	-1.210	-0.154
27	2	1.227	0.002

Point	Image	Vx	Vy
28	1	0.127	0.017
28	2	-0.129	-0.001

Point	Image	Vx	Vy
29	1	-0.476	-0.062
29	2	0.483	0.002

Point	Image	Vx	Vy
30	1	1.414	0.183
30	2	-1.436	-0.005

Point	Image	Vx	Vy
31	1	-1.753	-0.219
31	2	1.776	-0.002

Point	Image	Vx	Vy
32	1	-0.599	-0.073
32	2	0.606	-0.003

Point	Image	Vx	Vy
33	1	-0.346	-0.042
33	2	0.350	-0.002

Point	Image	Vx	Vy
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34	1	-0.049	-0.006
34	2	0.050	-0.000

Point	Image	Vx	Vy
35	1	7.487	0.916
35	2	-7.574	0.026

Point	Image	Vx	Vy
36	1	0.009	0.001
36	2	-0.009	0.000

Point	Image	Vx	Vy
37	1	-0.974	-0.117
37	2	0.985	-0.006

Mean error of 72 image points: ax=0.000, ay=-0.000

RMSE of 72 image points: mx=1.443, my=0.125

The coordinates of object points

Point ID	X	Y	Z	Overlap	
1	504559.9080	4038218.1330	314.0000	2	
3	504049.0130	4038238.7580	317.0000	2	
4	504600.3520	4037670.1510	312.0000	2	
5	503716.7480	4037606.1200	317.0000	2	
6	504252.2610	4038595.9630	317.0000	2	
7	504436.5930	4037730.1590	316.0000	2	
8	504278.7000	4037852.1190	316.0000	2	
9	503802.9130	4038517.7900	319.0000	2	
10	504291.1900	4038249.9370	313.0000	2	
11	504448.8600	4038393.0380	311.0000	2	
12	504061.6560	4038470.6640	317.0000	2	
13	504241.4880	4038082.7990	317.0000	2	
14	504402.6250	4037937.9850	314.0000	2	
15	504577.3050	4037797.4380	314.0000	2	
16	504442.8250	4038170.0240	314.0000	2	
17	504338.0290	4038524.6110	314.0000	2	
18	504116.5900	4038611.1200	317.0000	2	
19	503606.0370	4038242.9530	318.0000	2	
20	503669.3910	4038363.1050	316.0000	2	
21	503775.0430	4038037.9060	318.0000	2	
22	503795.2070	4037831.1270	319.0000	2	
23	503829.8520	4037701.3260	320.0000	2	
24	504239.3440	4037752.5990	317.0000	2	
25	504083.1940	4037702.6120	320.0000	2	
26	504050.7710	4037916.7650	316.0000	2	
27	504140.0690	4038167.2670	316.0000	2	
28	503888.4960	4038439.3330	317.0000	2	
29	503962.7850	4038467.2630	315.0000	2	
30	503993.1300	4038317.4600	317.0000	2	
31	504226.7930	4038407.2940	314.0000	2	
32	504464.6260	4038050.5620	317.0000	2	
33	504453.1950	4038400.8030	312.6082	2	
34	504321.9614	4038325.3614	313.2941	2	
35	504383.5747	4038291.7099	282.8007	2	
36	504296.8190	4038246.9363	313.7674	2	
37	504524.0074	4038159.7274	315.2476	2	

The total object points = 36

The residuals of image points

Point	Image	Vx	Vy
1	1	0.921	-2.447
1	2	2.078	-1.980

Point	Image	Vx	Vy
3	1	0.759	3.362

3	2	0.723	1.093
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Point	Image	Vx	Vy
4	1	-2.241	-0.724
4	2	-0.189	0.469

Point	Image	Vx	Vy
5	1	-1.952	-0.254
5	2	-2.986	-3.135

Point	Image	Vx	Vy
6	1	0.939	-0.791
6	2	0.032	-0.803

Point	Image	Vx	Vy
7	1	-0.009	-0.123
7	2	-0.022	0.631

Point	Image	Vx	Vy
8	1	0.474	2.868
8	2	-0.203	1.715

Point	Image	Vx	Vy
9	1	0.049	-0.424
9	2	0.069	0.354

Point	Image	Vx	Vy
10	1	1.420	-1.736
10	2	0.907	-0.560

Point	Image	Vx	Vy
11	1	0.061	-1.986
11	2	0.708	-1.422

Point	Image	Vx	Vy
12	1	-0.793	-0.459
12	2	2.054	0.610

Point	Image	Vx	Vy
13	1	1.363	-0.646
13	2	2.620	1.695

Point	Image	Vx	Vy
14	1	-1.071	0.202
14	2	0.125	1.713

Point	Image	Vx	Vy
15	1	1.758	0.367
15	2	2.884	0.350

Point	Image	Vx	Vy
16	1	-0.970	-0.936
16	2	-0.860	0.219

Point	Image	Vx	Vy
17	1	-1.147	-1.339
17	2	-0.570	-1.889

Point	Image	Vx	Vy
18	1	1.291	0.271
18	2	1.859	-0.568

Point	Image	Vx	Vy
19	1	0.446	-0.450
19	2	0.218	0.635

Point	Image	Vx	Vy
20	1	1.396	-0.988
20	2	0.252	1.702

Point	Image	Vx	Vy
21	1	-2.236	-0.346
21	2	0.615	0.084

Point	Image	Vx	Vy
22	1	1.045	-1.042
22	2	1.748	0.410

Point	Image	Vx	Vy
23	1	1.089	-2.079
23	2	0.464	-1.944

Point	Image	Vx	Vy
24	1	0.943	1.857
24	2	-0.389	0.667

Point	Image	Vx	Vy
25	1	1.188	-0.879
25	2	-0.569	-1.036

Point	Image	Vx	Vy
26	1	-1.560	0.555
26	2	-2.147	1.569

Point	Image	Vx	Vy
27	1	-0.911	0.414
27	2	1.597	-2.258

Point	Image	Vx	Vy
28	1	0.462	1.027
28	2	0.321	1.902

Point	Image	Vx	Vy
29	1	-2.125	-0.319
29	2	-1.179	1.190

Point	Image	Vx	Vy
30	1	1.309	3.017
30	2	-1.170	-2.068

Point	Image	Vx	Vy
31	1	-2.673	1.612
31	2	1.092	-1.405

Point	Image	Vx	Vy
32	1	0.826	0.545
32	2	2.090	0.320

Point	Image	Vx	Vy
33	1	0.009	-0.332
33	2	0.667	0.040

Point	Image	Vx	Vy
34	1	0.007	-0.270
34	2	0.074	0.187

Point	Image	Vx	Vy				
35	1	-0.079	2.950	36	2	-0.081	0.639
35	2	-14.804	1.453				
Point	Image	Vx	Vy	Point	Image	Vx	Vy
36	1	0.018	-0.670	37	1	-0.005	0.195
				37	2	1.977	-0.580

Total mean error of 72 image points: ax=0.000, ay=-0.000
Total RMSE of 72 image points: mx=2.159, my=1.363

The image residuals of the control points

The image ID = 1			
Point ID	Vx	Vy	
1	0.921	-2.447	
3	0.759	3.362	
4	-2.241	-0.724	
5	-1.952	-0.254	
6	0.939	-0.791	
7	-0.009	-0.123	
8	0.474	2.868	
9	0.049	-0.424	
10	1.420	-1.736	
11	0.061	-1.986	
12	-0.793	-0.459	
13	1.363	-0.646	
14	-1.071	0.202	
15	1.758	0.367	
16	-0.970	-0.936	
17	-1.147	-1.339	
18	1.291	0.271	
19	0.446	-0.450	
20	1.396	-0.988	
21	-2.236	-0.346	
22	1.045	-1.042	
23	1.089	-2.079	
24	0.943	1.857	
25	1.188	-0.879	
26	-1.560	0.555	
27	-0.911	0.414	
28	0.462	1.027	
29	-2.125	-0.319	
30	1.309	3.017	
31	-2.673	1.612	
32	0.826	0.545	
33	0.009	-0.332	
34	0.007	-0.270	
35	-0.079	2.950	
36	0.018	-0.670	
37	-0.005	0.195	

RMSE of 36 points: mx=1.217, my=1.408

The image ID = 2			
Point ID	Vx	Vy	
1	2.078	-1.980	
3	0.723	1.093	
4	-0.189	0.469	
5	-2.986	-3.135	
6	0.032	-0.803	
7	-0.022	0.631	
8	-0.203	1.715	
9	0.069	0.354	
10	0.907	-0.560	
11	0.708	-1.422	
12	2.054	0.610	
13	2.620	1.695	
14	0.125	1.713	
15	2.884	0.350	
16	-0.860	0.219	
17	-0.570	-1.889	
18	1.859	-0.568	
19	0.218	0.635	
20	0.252	1.702	
21	0.615	0.084	
22	1.748	0.410	
23	0.464	-1.944	
24	-0.389	0.667	
25	-0.569	-1.036	
26	-2.147	1.569	
27	1.597	-2.258	
28	0.321	1.902	
29	-1.179	1.190	
30	-1.170	-2.068	
31	1.092	-1.405	
32	2.090	0.320	
33	0.667	0.040	
34	0.074	0.187	
35	-14.804	1.453	
36	-0.081	0.639	
37	1.977	-0.580	

RMSE of 36 points: mx=2.801, my=1.317

Total number of all control image points = 72
Total rmsex = 2.159, rmsey = 1.363

Area around Tell Hammam et Turkman

The Triangulation Report With LPS

The output image x, y units: pixels

The output angle unit: degrees

The output ground X, Y, Z units: meters

The Input Image Coordinates

image ID = 1

Point ID	x	y			
1	48.030	285.957	45	272.934	48.181
2	260.017	42.045	46	272.724	86.029
3	65.017	42.128	47	287.955	92.976
4	39.823	215.893	48	275.710	115.009
5	114.040	369.069	49	143.302	256.103
6	244.484	615.957	50	138.038	273.391
7	66.854	500.011	51	114.566	287.018
8	123.619	619.875	52	129.885	305.495
9	118.451	446.500	53	141.091	316.093
10	69.765	339.780	54	282.418	174.666
11	308.179	199.886	55	184.672	318.784
12	213.833	400.988	56	325.690	420.344
13	205.981	470.050	57	130.634	490.783
14	148.105	232.597	58	129.786	542.825
15	229.152	134.033	59	131.793	560.469
16	271.374	30.230	60	120.486	572.412
17	140.873	31.013	61	126.626	589.027
18	81.722	27.011	62	254.435	568.066
19	99.613	107.998	63	250.336	605.139
20	18.629	88.475	64	305.375	603.738
21	88.049	293.126	65	244.918	637.797
22	110.831	265.958	66	251.968	656.010
23	108.151	166.125	67	185.241	18.623
24	19.842	45.966	68	189.927	36.576
25	272.095	94.997	69	206.441	39.851
26	291.732	138.781	70	235.183	127.594
27	250.007	576.033	71	294.079	129.330
28	324.961	674.026	72	107.108	370.651
30	288.263	436.797	73	309.729	280.857
31	316.000	484.010	74	115.547	446.973
32	253.272	210.849	75	314.098	494.599
33	283.172	356.983	76	238.086	562.349
34	182.017	201.904	77	186.545	592.974
35	172.420	132.348	78	223.706	608.007
36	251.183	274.783	79	178.643	223.432
37	171.739	326.859	80	165.235	644.402
39	84.505	26.345	81	321.319	663.960
40	140.990	33.412	82	281.007	58.659
41	81.708	43.215	83	298.441	222.718
42	172.951	168.845	84	247.294	583.311
43	251.078	22.998	85	301.921	589.732
44	285.367	24.540	86	321.388	606.026

Affine coefficients from file (pixels) to film (millimeters)

A0	A1	A2	B0	B1	B2
-2.3800	0.000000	0.007000	-1.2530	0.007000	0.000000

image ID = 2

Point ID	x	y			
1	25.873	329.915	45	289.504	60.157
2	277.104	56.025	46	284.251	96.939
3	72.826	89.055	47	299.714	101.184
4	24.529	261.669	48	283.833	124.799
5	82.000	397.866	49	128.334	283.169
6	188.946	615.733	50	121.067	301.017
7	19.765	533.967	51	94.517	318.308
8	62.798	639.294	52	108.354	333.627
9	78.208	474.505	53	118.501	341.949
10	41.407	379.468	54	283.248	181.362
11	307.008	200.867	55	163.654	337.192
12	182.909	419.908	56	297.586	411.762
13	166.080	482.941	57	86.611	512.960
14	134.426	260.157	58	80.761	569.213
15	234.202	150.952	59	79.252	580.617
16	290.137	43.010	60	66.292	593.925
17	153.741	64.896	61	70.177	609.065
18	92.817	70.730	62	205.744	567.060
19	102.343	146.927	63	196.658	603.934
20	16.307	142.719	64	254.138	592.931
21	66.711	329.934	65	187.091	636.153
22	92.075	295.983	66	192.202	652.785
23	101.027	203.518	67	201.510	45.087
24	25.821	101.922	68	204.370	61.787
25	283.196	105.980	69	221.105	62.190
26	297.041	144.963	70	240.243	143.086
27	197.889	576.020	71	301.127	135.501
28	265.753	658.547	72	76.345	401.161
30	256.749	437.091	73	298.534	279.159
31	279.845	475.047	74	75.489	474.553
32	251.034	222.811	75	277.248	486.489
33	261.448	356.520	76	189.763	563.986
34	174.727	225.113	77	131.877	602.472
35	174.040	161.694	78	168.398	611.395
36	241.002	283.703	79	169.270	245.247
37	148.503	346.910	80	103.217	656.262
39	95.711	69.605	81	263.011	649.057
40	153.797	66.727	82	296.504	69.094
41	90.823	86.835	83	294.171	224.318
42	170.512	193.459	84	196.147	582.788
43	269.591	39.034	85	252.347	579.766
44	305.270	34.815	86	270.560	592.240

Affine coefficients from file (pixels) to film (millimeters)

A0	A1	A2	B0	B1	B2
-2.4080	0.000000	0.007000	-1.2250	0.007000	0.000000

THE OUTPUT OF SELF-CALIBRATING BUNDLE BLOCK ADJUSTMENT

the no. of iteration =1 the standard error = 1.1530
the maximal correction of the object points = 0.00000

the no. of iteration =2 the standard error = 1.1530
the maximal correction of the object points = 0.00000

The exterior orientation parameters					
image ID	Xs	Ys	Zs	OMEGA	PHI KAPPA

1 408742.8180 3986422.9817 154316.5211 558.3953 -149.3423 467.4995
 2 400367.1537 4072756.3707 154047.2375 -12.8510 -33.5628 -82.0861

The interior orientation parameters of photos

image ID f(mm) xo(mm) yo(mm)

1 609.6020 0.0000 0.0000

2 609.6020 0.0000 0.0000

The residuals of the control points

Point ID rX rY rZ

All residuals of fixed GCP are zero.

The difference of intersected and measured control points

Point ID rX rY rZ

1	-1.1911	-0.1472	0.9960	45	-0.9925	0.3457	1.5532
2	2.2922	1.2160	-2.9622	46	-0.6616	0.2348	1.0585
3	-0.6217	-2.3927	-0.2114	47	-0.6672	0.2605	1.1745
4	1.9162	0.5260	-2.4775	48	-0.4381	0.1645	0.7436
5	-0.7428	-2.8913	0.7991	49	0.3532	-0.1480	-0.6690
6	-0.3669	5.0345	5.0917	50	0.3339	-0.1380	-0.6162
7	1.0755	0.0944	-0.5317	51	0.3227	-0.1139	-0.5052
8	4.8476	-2.1632	-0.9422	52	0.2687	-0.1061	-0.4734
9	-1.0322	-4.8172	8.2427	53	0.2520	-0.1058	-0.4784
10	-3.1943	-2.2674	3.0674	54	-0.0365	0.0372	0.1835
11	0.0544	-0.3683	-1.8784	55	0.3192	-0.1430	-0.6464
12	0.9797	5.5021	14.6123	56	1.2266	-0.3537	-1.4958
13	5.7990	1.2292	0.9915	57	-0.6200	0.2136	0.9319
14	-1.3482	5.6486	0.8672	58	-1.2416	0.4278	1.8894
15	-0.4469	-1.4183	2.4339	59	-1.1650	0.4054	1.7589
16	-1.7225	1.0940	7.1142	60	-1.3846	0.4930	2.1477
17	1.2705	-2.0146	-2.0506	61	-1.4759	0.5210	2.2560
18	0.8431	-1.6200	-1.6644	62	0.2700	-0.1193	-0.5318
19	3.4196	11.1686	-10.8796	63	0.0239	-0.0421	-0.1975
20	1.4120	-2.4580	0.6482	64	0.9077	-0.3039	-1.3062
21	-5.3473	-2.9701	-6.1039	65	-0.2259	0.0391	0.1491
22	1.0936	3.9081	-13.1910	66	-0.2317	0.0410	0.1563
23	8.0098	-4.8687	-11.2411	67	-0.5507	0.1224	0.5162
24	1.5290	1.7276	6.1236	68	-0.4788	0.1022	0.4288
25	-0.5446	-1.6586	-1.0070	69	-0.5989	0.1503	0.6480
26	4.3684	-8.5731	-1.0118	70	-0.2072	0.0457	0.1920
27	-5.2509	-0.6111	3.4986	71	-0.3864	0.1727	0.7941
28	-1.5303	-0.7535	1.2235	72	-0.0217	0.0225	0.1045
30	1.1938	2.5153	-10.0748	73	0.6125	-0.1486	-0.6168
31	1.2859	-3.9106	-13.7370	74	-0.4575	0.1730	0.7575
32	-3.4749	4.8576	12.4370	75	1.1789	-0.3617	-1.5730
33	6.5816	0.7969	-5.5177	76	0.0934	-0.0635	-0.2967
34	1.9156	0.0438	-0.7195	77	-0.7679	0.2320	0.9837
35	-9.1040	0.8567	11.2909	78	-0.3950	0.0954	0.3935
36	-4.4947	-1.8855	2.4307	79	0.2946	-0.1401	-0.6406
37	-2.8607	-0.3655	-4.1965	80	-1.5049	0.4984	2.1313
39	0.5618	-0.2199	-0.9912	81	0.9495	-0.3162	-1.3466
40	-0.0392	-0.0490	-0.2482	82	-0.9416	0.3403	1.5326
41	0.6369	-0.2390	-1.0649	83	0.2629	-0.0412	-0.1533
42	0.2098	-0.1169	-0.5388	84	0.1102	-0.0703	-0.3161
43	-1.0758	0.3442	1.5389	85	0.9027	-0.3023	-1.3022
44	-1.3175	0.4704	2.1269	86	1.1779	-0.3769	-1.6135

aX aY aZ
 -0.0000 -0.0000 -0.0000

mX	mY	mZ
2.3103	2.3402	4.3616
CE90	LE90	
5.0199	7.2113	

The image residuals of intersected GCP

Point	Image	Vx	Vy
1	1	0.386	0.020
1	2	-0.381	-0.069

Point	Image	Vx	Vy
2	1	0.200	0.010
2	2	-0.198	-0.036

Point	Image	Vx	Vy
3	1	-0.115	-0.006
3	2	0.113	0.021

Point	Image	Vx	Vy
4	1	-0.450	-0.023
4	2	0.445	0.081

Point	Image	Vx	Vy
5	1	-0.954	-0.049
5	2	0.943	0.171

Point	Image	Vx	Vy
6	1	-0.127	-0.007
6	2	0.125	0.023

Point	Image	Vx	Vy
7	1	0.657	0.034
7	2	-0.649	-0.118

Point	Image	Vx	Vy
8	1	-0.096	-0.005
8	2	0.095	0.017

Point	Image	Vx	Vy
9	1	-0.177	-0.009
9	2	0.175	0.032

Point	Image	Vx	Vy
10	1	0.230	0.012
10	2	-0.227	-0.041

Point	Image	Vx	Vy
11	1	-0.197	-0.010
11	2	0.194	0.035

Point	Image	Vx	Vy
12	1	0.163	0.008
12	2	-0.161	-0.029

Point	Image	Vx	Vy
13	1	-0.350	-0.018
13	2	0.346	0.063

Point	Image	Vx	Vy
14	1	-0.887	-0.046
14	2	0.876	0.159

Point	Image	Vx	Vy
15	1	0.601	0.031
15	2	-0.593	-0.108

Point	Image	Vx	Vy
16	1	0.088	0.005
16	2	-0.087	-0.016

Point	Image	Vx	Vy
17	1	0.004	0.000
17	2	-0.004	-0.001

Point	Image	Vx	Vy
18	1	0.150	0.008
18	2	-0.148	-0.027

Point	Image	Vx	Vy
19	1	0.610	0.032
19	2	-0.602	-0.109

Point	Image	Vx	Vy
20	1	-1.219	-0.064
20	2	1.203	0.218

Point	Image	Vx	Vy
21	1	0.367	0.019
21	2	-0.362	-0.066

Point	Image	Vx	Vy
22	1	-0.823	-0.043
22	2	0.813	0.147

Point	Image	Vx	Vy
23	1	-0.749	-0.039
23	2	0.739	0.134

Point	Image	Vx	Vy
24	1	0.328	0.017
24	2	-0.324	-0.059

Point	Image	Vx	Vy
25	1	0.280	0.014
25	2	-0.276	-0.050

Point	Image	Vx	Vy
26	1	-0.336	-0.017
26	2	0.332	0.060

Point	Image	Vx	Vy
27	1	-1.000	-0.052
27	2	0.989	0.180

Point	Image	Vx	Vy
28	1	-0.004	-0.000
28	2	0.004	0.001

Point	Image	Vx	Vy
30	1	0.063	0.003
30	2	-0.062	-0.011

Point	Image	Vx	Vy
31	1	-0.189	-0.010
31	2	0.187	0.034

Point	Image	Vx	Vy
32	1	1.307	0.067
32	2	-1.290	-0.234

Point	Image	Vx	Vy
33	1	-0.253	-0.013
33	2	0.250	0.046

Point	Image	Vx	Vy
34	1	-0.292	-0.015
34	2	0.288	0.052

Point	Image	Vx	Vy
35	1	0.283	0.015
35	2	-0.279	-0.051

Point	Image	Vx	Vy
36	1	1.214	0.062
36	2	-1.199	-0.218

Point	Image	Vx	Vy
37	1	-0.420	-0.022
37	2	0.415	0.075

Point	Image	Vx	Vy
39	1	0.103	0.005
39	2	-0.102	-0.018

Point	Image	Vx	Vy
40	1	0.075	0.004
40	2	-0.074	-0.013

Point	Image	Vx	Vy
41	1	0.191	0.010
41	2	-0.189	-0.034

Point	Image	Vx	Vy
42	1	0.177	0.009
42	2	-0.175	-0.032

Point	Image	Vx	Vy
43	1	-0.066	-0.003
43	2	0.065	0.012

Point	Image	Vx	Vy
44	1	-0.033	-0.002
44	2	0.033	0.006

Point	Image	Vx	Vy
45	1	0.070	0.004
45	2	-0.070	-0.013

Point	Image	Vx	Vy
46	1	-0.092	-0.005
46	2	0.091	0.017

Point	Image	Vx	Vy
47	1	0.121	0.006
47	2	-0.120	-0.022

Point	Image	Vx	Vy
48	1	-0.040	-0.002
48	2	0.039	0.007

Point	Image	Vx	Vy
49	1	-0.046	-0.002
49	2	0.046	0.008

Point	Image	Vx	Vy
50	1	0.147	0.008
50	2	-0.145	-0.026

Point	Image	Vx	Vy
51	1	-0.036	-0.002
51	2	0.035	0.006

Point	Image	Vx	Vy
52	1	0.033	0.002
52	2	-0.032	-0.006

Point	Image	Vx	Vy
53	1	-0.085	-0.004
53	2	0.084	0.015

Point	Image	Vx	Vy
54	1	-0.145	-0.007
54	2	0.143	0.026

Point	Image	Vx	Vy
55	1	-0.066	-0.003
55	2	0.065	0.012

Point	Image	Vx	Vy
56	1	-0.321	-0.016
56	2	0.317	0.058

Point	Image	Vx	Vy
57	1	0.184	0.010
57	2	-0.182	-0.033

Point	Image	Vx	Vy
58	1	1.404	0.073
58	2	-1.389	-0.252

Point	Image	Vx	Vy
59	1	0.229	0.012
59	2	-0.226	-0.041

Point	Image	Vx	Vy
60	1	0.355	0.018
60	2	-0.351	-0.064

Point	Image	Vx	Vy
61	1	0.136	0.007
61	2	-0.135	-0.024

Point	Image	Vx	Vy
62	1	0.063	0.003
62	2	-0.063	-0.011

Point	Image	Vx	Vy
63	1	-0.020	-0.001
63	2	0.020	0.004

Point	Image	Vx	Vy
64	1	-0.059	-0.003
64	2	0.059	0.011

Point	Image	Vx	Vy
65	1	0.011	0.001
65	2	-0.011	-0.002

Point	Image	Vx	Vy
66	1	0.042	0.002
66	2	-0.041	-0.008

Point	Image	Vx	Vy
67	1	-0.069	-0.004
67	2	0.069	0.012

Point	Image	Vx	Vy
68	1	0.028	0.001
68	2	-0.028	-0.005

Point	Image	Vx	Vy
69	1	-0.022	-0.001
69	2	0.022	0.004

Point	Image	Vx	Vy
70	1	0.030	0.002
70	2	-0.029	-0.005

Point	Image	Vx	Vy
71	1	-0.100	-0.005
71	2	0.099	0.018

Point	Image	Vx	Vy
72	1	-0.034	-0.002
72	2	0.033	0.006

Point	Image	Vx	Vy
73	1	-0.206	-0.011
73	2	0.204	0.037

Point	Image	Vx	Vy
74	1	-0.079	-0.004
74	2	0.078	0.014

Point	Image	Vx	Vy
75	1	0.232	0.012
75	2	-0.230	-0.042

Point	Image	Vx	Vy
76	1	0.204	0.010
76	2	-0.202	-0.037

Point	Image	Vx	Vy
77	1	0.009	0.000
77	2	-0.009	-0.002

Point	Image	Vx	Vy
78	1	-0.089	-0.005
78	2	0.088	0.016

Point	Image	Vx	Vy
79	1	-0.054	-0.003
79	2	0.053	0.010

Point	Image	Vx	Vy
80	1	-0.014	-0.001
80	2	0.014	0.003

Point	Image	Vx	Vy
81	1	-0.135	-0.007
81	2	0.133	0.024

Point	Image	Vx	Vy
82	1	0.018	0.001
82	2	-0.018	-0.003

Point	Image	Vx	Vy
83	1	-0.146	-0.008
83	2	0.144	0.026

Point	Image	Vx	Vy
84	1	-0.091	-0.005
84	2	0.090	0.016

Point	Image	Vx	Vy
85	1	-0.043	-0.002
85	2	0.042	0.008

Point	Image	Vx	Vy
86	1	-0.064	-0.003
86	2	0.063	0.012

Mean error of 168 image points: $a_x=0.000$, $a_y=-0.000$
 RMSE of 168 image points: $m_x=0.407$, $m_y=0.054$

The coordinates of object points				
Point ID	X	Y	Z	Overlap
1	504601.3250	4037669.0860	306.0000	2
2	505052.5800	4038347.5600	303.0000	2
3	504560.1430	4038215.2890	302.0000	2
4	504554.8350	4037816.9070	303.0000	2
5	504797.2240	4037537.5470	300.0000	2
6	505213.9090	4037081.2640	298.0000	2
7	504722.5890	4037216.5340	307.0000	2
8	504905.0130	4036997.9320	303.0000	2
9	504831.8560	4037371.3390	302.0000	2
10	504674.1500	4037567.5760	308.0000	2
11	505232.3640	4038038.5190	300.0000	2
12	505042.7030	4037518.5000	317.0000	2
13	505053.7480	4037373.5860	310.0000	2
14	504835.6790	4037849.1950	301.0000	2
15	505009.4760	4038127.9510	299.0000	2
16	505080.0051	4038380.7582	294.4476	2
17	504748.2140	4038292.6020	301.0000	2
18	504598.4150	4038260.3100	300.0000	2
19	504669.5260	4038083.1060	311.0000	2
20	504451.9930	4038080.4800	305.0000	2
21	504709.7260	4037684.1300	312.0000	2
22	504757.7240	4037756.3810	304.0000	2
23	504699.2990	4037975.4160	318.0000	2
24	504442.4200	4038169.7400	302.0000	2
25	505103.5540	4038242.6550	303.0000	2
26	505162.8080	4038167.6160	302.0000	2
27	505216.9730	4037177.2680	299.0000	2
28	505439.4980	4037015.5730	302.0000	2
30	505256.2210	4037501.3480	321.0000	2
31	505350.2370	4037427.9810	312.0000	2
32	505099.1760	4037969.5730	294.0000	2
33	505219.5190	4037678.7680	300.0000	2
34	504908.1050	4037944.8880	304.0000	2
35	504865.6920	4038086.0060	302.0000	2
36	505120.7970	4037837.4620	298.0000	2
37	504933.0930	4037667.4600	303.0000	2
39	504605.4025	4038262.2718	299.2867	2
40	504752.0607	4038286.1871	297.2395	2
41	504603.5045	4038223.1687	300.7966	2
42	504879.2514	4038012.5907	299.3855	2
43	505025.7937	4038383.5631	298.7355	2
44	505113.5749	4038403.8646	298.1568	2
45	505089.5964	4038343.4715	299.8086	2
46	505101.6684	4038260.8131	300.1463	2
47	505143.2169	4038256.2719	300.1092	2
48	505118.8175	4038199.4984	301.2222	2
49	504833.8258	4037801.8444	299.9373	2
50	504826.5944	4037760.4199	300.6578	2
51	504771.1009	4037714.2482	301.2898	2
52	504816.6639	4037684.6455	301.0486	2
53	504848.6301	4037669.3086	300.7279	2
54	505156.7022	4038074.4295	300.7174	2
55	504960.1152	4037693.5902	300.4121	2
56	505352.3288	4037569.7610	299.6881	2
57	504884.7077	4037281.7180	299.6191	2
58	504890.1439	4037160.8493	321.6576	2
59	504911.5521	4037130.1840	300.5934	2
60	504887.9938	4037096.6496	299.7169	2

61	504908.5792	4037064.4077	300.0598	2
62	505224.0898	4037198.5350	300.6460	2
63	505225.7911	4037114.4425	301.7552	2
64	505365.0923	4037156.0039	300.7544	2
65	505224.4243	4037039.9356	300.4280	2
66	505248.2131	4037004.8579	301.2382	2
67	504858.6752	4038348.6288	297.0171	2
68	504876.9666	4038312.7757	297.1706	2
69	504919.9784	4038317.0213	296.8586	2
70	505022.2382	4038145.1364	298.9467	2
71	505170.5677	4038181.1192	300.5805	2
72	504780.4872	4037526.2284	302.9233	2
73	505264.1162	4037862.8067	298.6099	2
74	504826.6195	4037364.5908	305.8615	2
75	505348.1421	4037399.1621	303.2744	2
76	505181.8953	4037200.1896	299.3366	2
77	505061.6379	4037097.5084	299.4449	2
78	505158.9032	4037089.4838	302.2926	2
79	504912.6988	4037897.7812	298.5349	2
80	505024.9614	4036970.1090	300.5764	2
81	505424.8493	4037034.9706	303.1135	2
82	505113.2957	4038326.0415	300.2325	2
83	505216.4365	4037982.1552	296.9063	2
84	505211.5717	4037160.5858	299.6756	2
85	505351.9953	4037184.4129	299.9478	2
86	505406.8337	4037162.3599	300.0606	2

The total object points = 84

The residuals of image points

Point	Image	Vx	Vy	8	1	-1.560	-1.601
1	1	0.592	0.170	8	2	-1.275	-1.049
1	2	-0.141	-0.205				
Point	Image	Vx	Vy	Point	Image	Vx	Vy
2	1	0.021	0.053	9	1	-1.608	-1.420
2	2	-0.524	0.771	9	2	-0.771	-3.139
Point	Image	Vx	Vy	Point	Image	Vx	Vy
3	1	0.321	-0.999	10	1	0.793	-0.385
3	2	0.681	-0.965	10	2	0.546	-1.280
Point	Image	Vx	Vy	Point	Image	Vx	Vy
4	1	-0.574	-0.201	11	1	0.288	-0.314
4	2	0.226	0.544	11	2	0.653	0.125
Point	Image	Vx	Vy	Point	Image	Vx	Vy
5	1	-0.701	-1.177	12	1	-4.297	3.358
5	2	1.381	-1.161	12	2	-4.565	0.336
Point	Image	Vx	Vy	Point	Image	Vx	Vy
6	1	-1.603	2.614	13	1	-2.876	-0.097
6	2	-1.506	1.541	13	2	-2.229	0.161
Point	Image	Vx	Vy	Point	Image	Vx	Vy
7	1	0.379	-0.090	14	1	-0.943	2.663
7	2	-0.947	-0.060	14	2	0.522	2.581
Point	Image	Vx	Vy	Point	Image	Vx	Vy
				15	1	0.231	-0.362

15	2	-0.820	-1.031
Point	Image	Vx	Vy
16	1	-1.155	1.211
16	2	-1.214	-0.400
Point	Image	Vx	Vy
17	1	0.172	-1.188
17	2	0.226	-0.674
Point	Image	Vx	Vy
18	1	0.356	-0.927
18	2	0.108	-0.557
Point	Image	Vx	Vy
19	1	1.424	3.741
19	2	-0.701	6.060
Point	Image	Vx	Vy
20	1	-1.770	-1.268
20	2	0.805	-1.021
Point	Image	Vx	Vy
21	1	4.141	-1.089
21	2	3.434	-0.253
Point	Image	Vx	Vy
22	1	1.909	0.595
22	2	2.989	3.583
Point	Image	Vx	Vy
23	1	-0.603	-3.956
23	2	0.868	-0.903
Point	Image	Vx	Vy
24	1	-1.927	1.041
24	2	-2.527	-0.210
Point	Image	Vx	Vy
25	1	0.845	-0.722
25	2	0.360	-0.610
Point	Image	Vx	Vy
26	1	-1.207	-4.379
26	2	-0.080	-3.781
Point	Image	Vx	Vy
27	1	0.125	0.550
27	2	2.243	-0.290
Point	Image	Vx	Vy
28	1	0.305	-0.065
28	2	0.389	-0.415
Point	Image	Vx	Vy
30	1	2.050	0.249
30	2	1.523	2.391
Point	Image	Vx	Vy
31	1	3.095	-2.859

31	2	3.344	0.129
Point	Image	Vx	Vy
32	1	-0.869	3.516
32	2	-3.428	0.393
Point	Image	Vx	Vy
33	1	-1.372	-0.843
33	2	-1.061	0.794
Point	Image	Vx	Vy
34	1	-0.835	-0.277
34	2	-0.278	0.067
Point	Image	Vx	Vy
35	1	0.779	2.303
35	2	0.463	-0.713
Point	Image	Vx	Vy
36	1	2.404	-0.054
36	2	0.166	-1.131
Point	Image	Vx	Vy
37	1	1.763	-0.142
37	2	2.516	0.636
Point	Image	Vx	Vy
39	1	0.158	-0.231
39	2	-0.060	-0.011
Point	Image	Vx	Vy
40	1	0.156	-0.031
40	2	0.005	0.001
Point	Image	Vx	Vy
41	1	0.237	-0.249
41	2	-0.156	-0.030
Point	Image	Vx	Vy
42	1	0.243	-0.106
42	2	-0.116	-0.021
Point	Image	Vx	Vy
43	1	-0.075	0.389
43	2	0.075	0.013
Point	Image	Vx	Vy
44	1	-0.110	0.518
44	2	-0.017	-0.003
Point	Image	Vx	Vy
45	1	0.026	0.388
45	2	-0.094	-0.017
Point	Image	Vx	Vy
46	1	-0.129	0.255
46	2	0.069	0.012
Point	Image	Vx	Vy
47	1	0.056	0.286

47	2	-0.170	-0.030
Point	Image	Vx	Vy
48	1	-0.075	0.177
48	2	0.014	0.002
Point	Image	Vx	Vy
49	1	0.000	-0.158
49	2	0.084	0.015
Point	Image	Vx	Vy
50	1	0.187	-0.137
50	2	-0.113	-0.021
Point	Image	Vx	Vy
51	1	-0.021	-0.127
51	2	0.043	0.008
Point	Image	Vx	Vy
52	1	0.059	-0.111
52	2	-0.013	-0.002
Point	Image	Vx	Vy
53	1	-0.052	-0.115
53	2	0.112	0.021
Point	Image	Vx	Vy
54	1	-0.181	0.027
54	2	0.110	0.019
Point	Image	Vx	Vy
55	1	-0.012	-0.151
55	2	0.110	0.020
Point	Image	Vx	Vy
56	1	-0.379	-0.425
56	2	0.241	0.042
Point	Image	Vx	Vy
57	1	0.167	0.244
57	2	-0.187	-0.034
Point	Image	Vx	Vy
58	1	1.364	0.543
58	2	-1.405	-0.258
Point	Image	Vx	Vy
59	1	0.194	0.454
59	2	-0.238	-0.044
Point	Image	Vx	Vy
60	1	0.298	0.552
60	2	-0.379	-0.070
Point	Image	Vx	Vy
61	1	0.085	0.572
61	2	-0.157	-0.029
Point	Image	Vx	Vy
62	1	0.105	-0.119

62	2	-0.028	-0.005
Point	Image	Vx	Vy
63	1	0.024	-0.036
63	2	0.062	0.011
Point	Image	Vx	Vy
64	1	-0.048	-0.337
64	2	0.053	0.009
Point	Image	Vx	Vy
65	1	0.056	0.055
65	2	0.036	0.006
Point	Image	Vx	Vy
66	1	0.087	0.059
66	2	0.006	0.001
Point	Image	Vx	Vy
67	1	-0.001	0.154
67	2	0.144	0.026
Point	Image	Vx	Vy
68	1	0.093	0.135
68	2	0.043	0.008
Point	Image	Vx	Vy
69	1	0.029	0.184
69	2	0.082	0.015
Point	Image	Vx	Vy
70	1	0.056	0.060
70	2	-0.000	-0.000
Point	Image	Vx	Vy
71	1	-0.169	0.175
71	2	0.041	0.007
Point	Image	Vx	Vy
72	1	-0.053	0.018
72	2	0.015	0.003
Point	Image	Vx	Vy
73	1	-0.270	-0.193
73	2	0.132	0.023
Point	Image	Vx	Vy
74	1	-0.110	0.181
74	2	0.056	0.011
Point	Image	Vx	Vy
75	1	0.213	-0.399
75	2	-0.270	-0.047
Point	Image	Vx	Vy
76	1	0.249	-0.050
76	2	-0.161	-0.029
Point	Image	Vx	Vy
77	1	0.033	0.263

77	2	0.028	0.005
Point	Image	Vx	Vy
78	1	-0.046	0.112
78	2	0.136	0.024
Point	Image	Vx	Vy
79	1	0.008	-0.146
79	2	0.106	0.019
Point	Image	Vx	Vy
80	1	-0.022	0.548
80	2	0.034	0.006
Point	Image	Vx	Vy
81	1	-0.128	-0.353
81	2	0.123	0.021
Point	Image	Vx	Vy

82	1	-0.040	0.375
82	2	-0.056	-0.010
Point	Image	Vx	Vy
83	1	-0.204	-0.068
83	2	0.085	0.015
Point	Image	Vx	Vy
84	1	-0.047	-0.071
84	2	0.129	0.023
Point	Image	Vx	Vy
85	1	-0.031	-0.334
85	2	0.037	0.007
Point	Image	Vx	Vy
86	1	-0.071	-0.423
86	2	0.035	0.006

Total mean error of 168 image points: ax=0.000, ay=-0.000
 Total RMSE of 168 image points: mx=1.112, my=1.152

The image residuals of the control points

The image ID = 1			
Point ID	Vx	Vy	
1	0.592	0.170	
2	0.021	0.053	
3	0.321	-0.999	
4	-0.574	-0.201	
5	-0.701	-1.177	
6	-1.603	2.614	
7	0.379	-0.090	
8	-1.560	-1.601	
9	-1.608	-1.420	
10	0.793	-0.385	
11	0.288	-0.314	
12	-4.297	3.358	
13	-2.876	-0.097	
14	-0.943	2.663	
15	0.231	-0.362	
16	-1.155	1.211	
17	0.172	-1.188	
18	0.356	-0.927	
19	1.424	3.741	
20	-1.770	-1.268	
21	4.141	-1.089	
22	1.909	0.595	
23	-0.603	-3.956	
24	-1.927	1.041	
25	0.845	-0.722	
26	-1.207	-4.379	
27	0.125	0.550	
28	0.305	-0.065	
30	2.050	0.249	
31	3.095	-2.859	
32	-0.869	3.516	

33	-1.372	-0.843
34	-0.835	-0.277
35	0.779	2.303
36	2.404	-0.054
37	1.763	-0.142
39	0.158	-0.231
40	0.156	-0.031
41	0.237	-0.249
42	0.243	-0.106
43	-0.075	0.389
44	-0.110	0.518
45	0.026	0.388
46	-0.129	0.255
47	0.056	0.286
48	-0.075	0.177
49	0.000	-0.158
50	0.187	-0.137
51	-0.021	-0.127
52	0.059	-0.111
53	-0.052	-0.115
54	-0.181	0.027
55	-0.012	-0.151
56	-0.379	-0.425
57	0.167	0.244
58	1.364	0.543
59	0.194	0.454
60	0.298	0.552
61	0.085	0.572
62	0.105	-0.119
63	0.024	-0.036
64	-0.048	-0.337

65	0.056	0.055
66	0.087	0.059
67	-0.001	0.154
68	0.093	0.135
69	0.029	0.184
70	0.056	0.060
71	-0.169	0.175
72	-0.053	0.018
73	-0.270	-0.193
74	-0.110	0.181
75	0.213	-0.399

76	0.249	-0.050
77	0.033	0.263
78	-0.046	0.112
79	0.008	-0.146
80	-0.022	0.548
81	-0.128	-0.353
82	-0.040	0.375
83	-0.204	-0.068
84	-0.047	-0.071
85	-0.031	-0.334
86	-0.071	-0.423

RMSE of 84 points: mx=1.094, my=1.199

The image ID = 2

Point ID	Vx	Vy
1	-0.141	-0.205
2	-0.524	0.771
3	0.681	-0.965
4	0.226	0.544
5	1.381	-1.161
6	-1.506	1.541
7	-0.947	-0.060
8	-1.275	-1.049
9	-0.771	-3.139
10	0.546	-1.280
11	0.653	0.125
12	-4.565	0.336
13	-2.229	0.161
14	0.522	2.581
15	-0.820	-1.031
16	-1.214	-0.400
17	0.226	-0.674
18	0.108	-0.557
19	-0.701	6.060
20	0.805	-1.021
21	3.434	-0.253
22	2.989	3.583
23	0.868	-0.903
24	-2.527	-0.210
25	0.360	-0.610
26	-0.080	-3.781
27	2.243	-0.290
28	0.389	-0.415
30	1.523	2.391
31	3.344	0.129
32	-3.428	0.393
33	-1.061	0.794
34	-0.278	0.067
35	0.463	-0.713
36	0.166	-1.131
37	2.516	0.636
39	-0.060	-0.011
40	0.005	0.001
41	-0.156	-0.030
42	-0.116	-0.021
43	0.075	0.013
44	-0.017	-0.003

45	-0.094	-0.017
46	0.069	0.012
47	-0.170	-0.030
48	0.014	0.002
49	0.084	0.015
50	-0.113	-0.021
51	0.043	0.008
52	-0.013	-0.002
53	0.112	0.021
54	0.110	0.019
55	0.110	0.020
56	0.241	0.042
57	-0.187	-0.034
58	-1.405	-0.258
59	-0.238	-0.044
60	-0.379	-0.070
61	-0.157	-0.029
62	-0.028	-0.005
63	0.062	0.011
64	0.053	0.009
65	0.036	0.006
66	0.006	0.001
67	0.144	0.026
68	0.043	0.008
69	0.082	0.015
70	-0.000	-0.000
71	0.041	0.007
72	0.015	0.003
73	0.132	0.023
74	0.056	0.011
75	-0.270	-0.047
76	-0.161	-0.029
77	0.028	0.005
78	0.136	0.024
79	0.106	0.019
80	0.034	0.006
81	0.123	0.021
82	-0.056	-0.010
83	0.085	0.015
84	0.129	0.023
85	0.037	0.007
86	0.035	0.006

RMSE of 84 points: mx=1.129, my=1.103

Total number of all control image points = 168

Total rmsex = 1.112, rmsey = 1.152

Nahr al Abbara

The Triangulation Report With LPS

The output image x, y units: pixels

The output angle unit: degrees

The output ground X, Y, Z units: meters

The Input Image Coordinates

image ID = 1

Point ID	x	y			
1	707.176	725.056	47	790.078	963.987
2	727.881	728.089	48	576.827	947.912
3	665.938	803.136	49	729.979	320.762
4	584.196	664.962	50	846.841	133.778
5	549.959	635.070	51	228.275	653.036
6	441.194	659.948	52	421.458	578.096
7	151.172	568.086	53	1022.992	131.678
8	432.039	894.974	54	891.203	354.296
9	418.920	791.902	55	1709.913	696.754
10	613.056	1036.847	56	1238.177	354.996
11	259.109	941.112	57	433.974	32.190
12	120.996	985.730	58	462.820	38.579
13	163.179	798.921	59	400.647	90.383
14	262.136	742.986	60	562.956	20.015
15	105.184	506.919	61	606.591	45.998
16	298.258	424.665	62	594.810	65.468
17	597.093	393.839	63	675.494	49.361
18	349.158	220.006	64	1373.655	52.525
19	241.625	322.625	65	1440.668	93.971
20	189.142	42.022	66	1429.183	105.064
21	143.313	149.094	67	1610.657	94.252
22	425.035	72.937	68	1566.474	114.181
23	603.008	49.826	69	479.364	160.325
24	492.289	153.998	70	583.593	141.475
25	514.801	260.127	71	616.663	194.594
26	499.002	364.007	72	713.733	130.973
27	646.066	511.094	73	685.139	135.885
28	830.974	505.126	74	696.677	171.485
29	801.024	360.853	75	661.154	215.165
30	1386.211	45.886	76	647.802	236.935
31	1455.894	1138.895	77	714.421	236.120
32	1402.230	768.073	78	797.589	191.641
33	1479.288	383.928	79	1404.409	150.818
34	1792.127	420.903	80	1404.203	186.786
35	1656.954	416.785	81	1454.003	135.329
36	1592.853	305.927	82	1441.216	157.139
37	1610.064	125.070	83	1420.128	200.197
38	1648.720	983.954	84	1543.660	128.554
39	1143.189	30.874	85	1770.617	132.643
40	1171.983	205.950	86	1722.862	226.970
41	1078.262	387.245	87	501.723	284.797
42	1056.296	614.075	88	579.000	304.765
43	1095.759	730.018	89	526.222	312.369
44	1110.061	891.057	90	520.631	331.226
45	1198.875	1101.337	91	609.182	382.970
46	756.255	1117.000	92	662.990	276.613

93	754.828	281.967	153	787.820	960.852
94	793.671	343.858	154	1377.210	968.007
95	813.215	365.226	155	1358.402	981.041
96	812.643	381.411	156	1368.729	983.078
97	1381.796	338.497	157	267.394	1025.878
98	1467.188	314.648	158	278.680	1147.042
99	1440.453	373.981	159	683.787	1056.213
100	494.028	391.669	160	770.820	1108.168
101	618.598	405.849	161	1358.041	1038.070
102	669.449	411.135	162	1403.288	1091.368
103	809.094	401.970	163	1423.666	1099.750
104	784.923	460.700	164	1455.299	1129.124
105	1402.431	404.908	165	540.670	42.168
106	1391.252	481.420	166	674.244	101.471
107	1420.343	423.161	167	1366.434	617.966
108	1631.722	490.627	168	1397.338	723.519
109	1664.463	430.398	169	513.847	55.946
110	533.904	636.329	170	648.552	114.186
111	631.627	637.707	171	1441.663	103.717
112	783.715	523.314	172	779.856	179.485
113	819.349	530.241	173	738.376	326.448
114	1379.205	521.484	174	710.838	377.354
115	1378.830	529.354	175	694.963	497.914
116	1390.735	534.408	176	807.926	486.960
117	1573.768	557.402	177	820.548	487.111
118	1588.747	563.350	178	1104.724	441.108
119	1569.587	590.972	179	1399.574	454.198
120	566.004	677.854	180	1438.970	419.453
121	600.626	706.254	181	1386.354	600.436
122	683.639	640.977	182	1603.936	582.142
123	822.298	716.467	183	1487.477	651.945
124	1369.943	667.647	184	671.737	802.389
125	1391.669	675.015	185	778.061	883.801
126	1365.132	690.455	186	1387.837	766.821
127	1377.844	693.007	187	1381.048	856.609
128	1477.268	729.148	188	1357.077	899.018
129	1466.274	756.947	189	1351.687	959.703
130	413.552	802.914	190	698.442	1055.882
131	615.518	773.092	191	731.866	1073.655
132	611.917	818.982	192	647.852	343.547
133	627.996	819.101	193	702.519	787.522
134	590.176	894.856	194	826.118	869.585
135	802.566	778.899	195	1378.269	489.666
136	800.407	792.373	196	630.117	839.487
137	787.629	819.315	197	1369.089	884.114
138	777.317	821.620	198	399.147	111.379
139	775.949	884.483	199	603.593	144.821
140	1386.210	780.472	200	657.083	108.332
141	1418.177	783.535	201	1433.960	175.151
142	1399.274	813.305	202	1418.396	182.068
143	1368.238	820.983	203	746.503	413.707
144	1409.252	783.848	204	763.701	448.364
145	218.639	972.940	205	755.211	456.765
146	428.472	912.366	206	622.986	752.703
147	618.061	918.842	207	672.565	641.715
148	720.061	908.122	208	772.021	697.697
149	711.203	940.988	209	754.481	718.625
150	779.369	897.243	210	604.202	872.759
151	794.097	896.654	211	720.529	885.216
152	774.825	923.142	212	1117.073	871.653

213	727.347	1113.165	243	1452.002	735.486
214	1131.804	1130.615	244	267.264	1026.881
215	731.712	729.157	245	1406.714	82.399
216	1401.856	776.081	246	795.848	182.806
217	1458.864	745.882	247	1484.723	276.844
218	1446.297	119.921	248	579.871	707.028
219	745.603	1073.527	249	1393.289	687.875
220	1383.058	993.003	250	629.623	1002.024
221	1650.348	39.819	251	787.352	954.291
222	1398.199	203.339	252	1364.634	928.359
223	1460.446	313.476	253	202.891	1071.604
224	808.863	685.157	254	1447.136	1111.056
225	1391.234	718.337	255	1559.475	158.585
226	731.661	872.008	256	1073.999	634.381
227	1143.189	1115.917	257	775.348	821.331
228	819.073	1128.095	258	212.581	1156.719
229	1173.361	216.400	259	1364.396	584.473
230	1604.199	310.285	260	827.364	763.990
231	1605.387	119.786	261	860.440	17.347
232	550.260	182.648	262	1173.619	187.977
233	1413.653	418.757	263	1527.633	221.795
234	727.901	633.569	264	802.363	270.918
235	651.085	668.447	265	226.437	1059.155
236	770.097	717.963	266	725.963	364.302
237	1439.422	729.432	267	1382.596	322.853
238	1379.205	746.737	268	1069.567	617.426
239	1439.094	737.836	269	714.286	869.566
240	1467.086	1152.426	270	564.994	689.503
241	640.538	425.386	271	750.607	1098.642
242	1496.655	616.676			

Affine coefficients from file (pixels) to film (millimeters)

A0	A1	A2	B0	B1	B2
-4.5045	0.000000	0.007000	-6.2825	0.007000	-0.000000

image ID = 2

Point ID	x	y			
1	907.037	788.952	24	520.064	219.083
2	929.085	790.959	25	574.963	326.001
3	891.242	873.969	26	591.050	429.979
4	767.913	735.901	27	781.107	579.145
5	723.028	703.990	28	964.932	574.037
6	624.054	729.326	29	889.841	427.056
7	306.043	635.035	30	1370.899	110.835
8	686.103	967.996	31	1781.314	1214.972
9	642.588	863.237	32	1613.135	839.246
10	909.342	1113.005	33	1572.795	457.100
11	525.854	1013.157	34	1893.142	486.043
12	401.706	1059.117	35	1757.262	485.818
13	389.185	868.945	36	1659.067	371.999
14	471.205	811.997	37	1620.910	191.930
15	242.135	572.090	38	1926.315	1058.353
16	400.013	475.162	39	1126.776	94.093
17	697.346	461.007	40	1211.138	270.963
18	397.033	284.824	41	1172.086	454.069
19	322.458	394.808	42	1221.046	683.823
20	184.045	104.930	43	1296.822	800.046
21	172.185	211.919	44	1362.062	966.208
22	428.024	136.010	45	1511.968	1177.565
23	597.167	113.959	46	1077.729	1195.028

47	1064.150	1038.844	107	1524.809	491.113
48	847.125	1022.794	108	1756.521	558.787
49	807.100	385.928	109	1770.497	497.720
50	865.997	200.053	110	708.957	706.026
51	408.953	722.107	111	806.646	708.357
52	579.024	646.910	112	921.675	592.006
53	1031.439	197.704	113	960.353	599.134
54	984.535	423.659	114	1514.338	590.414
55	1869.916	727.540	115	1516.568	598.117
56	1320.170	422.964	116	1529.932	603.460
57	424.803	95.907	117	1719.700	626.816
58	455.721	102.173	118	1736.531	632.723
59	409.457	154.231	119	1725.806	660.918
60	549.438	84.770	120	753.501	748.669
61	600.676	110.741	121	796.509	777.448
62	595.064	130.307	122	859.263	711.447
63	670.435	114.104	123	1020.586	787.697
64	1363.391	117.277	124	1550.878	738.434
65	1443.024	159.061	125	1574.708	745.020
66	1434.869	170.109	126	1553.453	762.206
67	1611.912	158.801	127	1566.518	763.922
68	1573.920	179.662	128	1676.490	800.644
69	509.188	225.161	129	1673.202	828.847
70	606.850	207.105	130	639.655	874.658
71	655.834	259.352	131	832.291	845.867
72	732.890	196.096	132	841.702	892.372
73	706.647	201.221	133	857.707	892.333
74	728.458	236.933	134	843.174	969.381
75	706.419	281.352	135	1020.138	850.392
76	700.368	303.409	136	1020.633	864.271
77	765.756	301.751	137	1016.958	891.427
78	834.516	255.501	138	1007.199	893.789
79	1424.295	216.343	139	1025.521	958.790
80	1435.177	252.560	140	1600.942	852.937
81	1468.992	200.643	141	1634.214	856.184
82	1462.926	222.551	142	1624.413	886.191
83	1455.426	265.901	143	1596.024	894.276
84	1556.034	193.417	144	1625.269	856.581
85	1782.700	197.371	145	496.091	1046.346
86	1764.506	292.520	146	686.872	987.114
87	569.275	351.164	147	878.638	993.310
88	652.527	371.557	148	977.158	982.691
89	602.370	378.996	149	978.379	1016.114
90	602.340	398.240	150	1032.913	971.635
91	706.212	450.349	151	1047.408	971.327
92	727.355	343.268	152	1036.177	997.872
93	819.358	347.817	153	1061.268	1036.112
94	877.708	409.739	154	1650.855	1043.714
95	903.365	430.957	155	1636.360	1057.067
96	907.582	447.235	156	1647.438	1059.224
97	1460.127	405.478	157	561.388	1100.460
98	1537.654	381.252	158	609.971	1223.846
99	1529.783	441.307	159	986.562	1133.577
100	593.980	457.642	160	1090.089	1186.586
101	722.592	473.722	161	1653.599	1115.247
102	774.812	478.888	162	1715.485	1169.528
103	910.450	468.111	163	1738.566	1177.852
104	904.909	528.404	164	1779.377	1207.706
105	1501.551	472.270	165	534.006	106.872
106	1514.169	549.679	166	684.600	166.247

167	1531.914	688.494	220	1664.464	1069.271
168	1595.518	795.123	221	1634.453	104.307
169	511.672	120.569	222	1434.350	269.902
170	663.393	179.489	223	1530.524	380.342
171	1447.032	168.841	224	993.457	749.684
172	813.034	244.615	225	1587.818	790.103
173	817.340	393.185	226	976.993	945.794
174	805.167	444.338	227	1462.798	1191.585
175	826.232	566.351	228	1143.554	1206.425
176	935.541	554.192	229	1214.321	279.632
177	948.236	554.161	230	1673.008	378.138
178	1215.777	508.075	231	1614.591	184.862
179	1513.793	522.099	232	586.358	248.180
180	1541.553	487.238	233	1516.845	486.520
181	1546.446	670.268	234	900.998	703.695
182	1757.309	651.530	235	835.746	739.408
183	1663.341	722.285	236	968.083	782.102
184	896.077	873.654	237	1639.170	801.395
185	1027.350	958.114	238	1583.900	819.086
186	1598.420	839.126	239	1640.918	809.943
187	1619.967	930.423	240	1798.349	1231.266
188	1609.315	973.435	241	749.839	493.007
189	1622.923	1035.385	242	1660.869	687.400
190	1001.015	1133.035	243	1649.479	809.282
191	1039.755	1151.268	244	561.580	1101.531
192	732.132	410.588	245	1405.815	147.682
193	922.754	856.180	246	830.028	246.551
194	1070.999	943.076	247	1543.585	343.002
195	1503.630	557.755	248	775.870	778.063
196	866.416	912.930	249	1574.068	762.791
197	1616.417	958.303	250	890.666	1070.243
198	414.071	175.883	251	1058.569	1029.177
199	627.858	210.446	252	1625.875	1003.324
200	670.470	173.718	253	510.223	1146.227
201	1461.404	240.608	254	1765.760	1189.617
202	1448.042	247.755	255	1580.628	223.618
203	851.825	481.184	256	1244.458	703.758
204	879.678	515.845	257	1007.299	892.691
205	873.982	524.581	258	546.113	1233.604
206	833.470	824.554	259	1519.130	653.927
207	848.295	712.533	260	1040.154	818.079
208	965.142	765.843	261	839.825	71.746
209	952.544	781.084	262	1208.173	260.986
210	850.475	946.576	263	1573.343	272.734
211	970.664	959.562	264	864.409	336.781
212	1360.512	944.304	265	554.453	1141.120
213	1047.777	1191.053	266	816.795	431.386
214	1455.989	1207.478	267	1455.999	389.520
215	932.458	791.811	268	1234.402	687.197
216	1615.556	848.674	269	959.286	943.742
217	1662.796	817.816	270	766.930	774.976
218	1456.495	185.068	271	1066.405	1169.438
219	1053.828	1151.279			

Affine coefficients from file (pixels) to film (millimeters)

A0	A1	A2	B0	B1	B2
-4.3715	0.000000	0.007000	-7.0525	0.007000	0.000000

THE OUTPUT OF SELF-CALIBRATING BUNDLE BLOCK ADJUSTMENT

the no. of iteration =1 the standard error = 2.6039
the maximal correction of the object points = 0.00000

the no. of iteration =2 the standard error = 2.6039
the maximal correction of the object points = 0.00000

The exterior orientation parameters

image ID	Xs	Ys	Zs	OMEGA	PHI	KAPPA
1	610890.8760	4002770.1317	153248.5928	12.8839	33.8929	-82.2626
2	408869.8469	3985914.9215	154321.9328	378.6637	-30.6871	277.5169

The interior orientation parameters of photos

image ID	f(mm)	xo(mm)	yo(mm)
1	609.6020	0.0000	0.0000
2	609.6020	0.0000	0.0000

The residuals of the control points

Point ID	rX	rY	rZ
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All residuals of fixed GCP are zero.

The difference of intersected and measured control points

Point ID	rX	rY	rZ
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1	22.5149	6.6374	-20.5718	36	-1.8180	7.2045	5.1552
2	26.2892	7.5607	-19.4998	37	-5.2284	-1.4087	2.2909
3	9.1905	-2.0625	-7.1800	38	-16.8145	3.2596	21.0916
4	1.4148	-5.2946	3.6203	39	4.4699	-1.5768	-7.3173
5	2.5057	-1.6284	2.4747	40	9.6151	-16.2112	-4.7127
6	5.7139	-3.0673	4.7684	41	6.1459	1.3432	-6.0566
7	-2.9593	-2.7035	9.7339	42	-10.7442	-15.7645	-2.5328
8	4.2497	-2.1002	0.8783	43	-1.7274	-0.7936	-1.7367
9	3.7374	13.0874	5.9997	44	-5.5540	1.2154	2.3519
10	9.1323	-3.0738	-3.6078	45	-6.9747	1.8668	-0.6274
11	6.0804	-4.2531	2.0669	46	4.4795	17.9685	4.8129
12	2.8359	-7.8765	3.6183	47	3.3700	-3.1015	1.5631
13	3.5246	-3.7236	10.1006	48	1.6473	-4.6656	4.2500
14	5.0043	-5.7020	9.4188	49	7.8558	2.1517	4.4303
15	-4.3186	-3.8829	13.6543	50	2.6368	-6.3406	-1.0516
16	-1.6527	-9.5825	-5.7101	51	0.2622	-1.8631	9.0968
17	1.3935	-2.4625	3.0240	52	3.1452	5.6152	3.0357
18	6.2655	5.8017	4.9092	53	23.9634	0.8857	-22.2938
19	0.3841	5.8049	9.5393	54	-13.9490	-9.0609	11.5800
20	0.3663	5.7682	17.1765	55	22.8921	9.1151	-28.3897
21	-21.6776	3.5304	19.3344	56	-6.3976	-10.9834	-8.5935
22	0.8448	8.7363	5.5600	57	2.5572	-4.1417	2.2594
23	-21.7592	2.0951	7.0249	58	1.8915	-3.6911	1.4118
24	1.8724	1.2000	2.4009	59	3.3564	-4.3449	3.4470
25	3.8660	2.6967	4.2806	60	-0.1659	-2.3315	-1.2886
26	-1.4372	-2.2962	5.2940	61	-0.9159	-1.7101	-2.1969
27	19.2341	-13.9840	2.1363	62	-0.7019	-1.8251	-1.9000
28	2.4905	-5.3672	1.5390	63	-1.9646	-0.8683	-3.5000
29	6.0681	0.2033	-1.9138	64	-2.1000	4.2863	-1.5846
30	19.8995	3.1890	-7.3397	65	-0.9326	3.9570	0.1629
31	-14.3761	9.1905	13.7724	66	-1.0665	3.8101	-0.1103
32	-5.3051	1.4989	6.5648	67	2.3289	4.0242	5.4833
33	10.2307	-1.9827	6.9246	68	1.4779	3.7697	3.9782
34	-16.9006	0.7828	14.2445	69	1.5346	-2.9474	1.1832
35	-22.5507	-2.7000	7.9457	70	-0.4657	-1.7840	-1.4962

71	-0.9861	-1.3021	-2.0860	131	-1.1644	1.1706	-1.3574
72	-2.3705	-0.4214	-3.9327	132	-1.1727	1.4552	-1.2512
73	-2.0035	-0.7083	-3.4719	133	-1.3741	1.4476	-1.5752
74	-2.1203	-0.5620	-3.5880	134	-0.9998	1.9959	-0.7468
75	-1.6210	-0.8312	-2.9101	135	-2.8906	1.0431	-4.1702
76	-1.4213	-0.9107	-2.6257	136	-2.8819	1.0837	-4.1368
77	-2.2779	-0.3451	-3.7361	137	-2.8219	1.2074	-3.9916
78	-3.1572	0.3081	-4.8431	138	-2.7595	1.2398	-3.8781
79	-1.2473	3.2634	-0.6283	139	-2.7986	1.4889	-3.8097
80	-1.1023	2.8746	-0.5542	140	0.4489	-2.0742	-0.1429
81	-0.5303	3.4803	0.6184	141	1.0130	-2.3790	0.6413
82	-0.6467	3.2192	0.3245	142	0.7409	-2.3980	0.1948
83	-0.8017	2.7322	-0.1257	143	0.2318	-2.1572	-0.5191
84	1.0824	3.5780	3.2747	144	0.8539	-2.3006	0.4186
85	6.6066	3.1068	12.0768	145	6.4790	2.8523	11.2359
86	5.8025	1.7624	10.1910	146	1.6464	2.2594	3.5175
87	1.0524	-2.1088	0.7810	147	-1.3951	2.1196	-1.3251
88	-0.3515	-1.3109	-1.0960	148	-2.4211	1.7828	-3.0850
89	0.5747	-1.7447	0.1834	149	-2.3866	1.9892	-2.9377
90	0.6734	-1.7029	0.3541	150	-2.8294	1.5308	-3.8419
91	-0.8311	-0.7829	-1.6314	151	-2.9129	1.4725	-3.9935
92	-1.6116	-0.6960	-2.8324	152	-2.8244	1.6587	-3.7777
93	-2.6675	-0.0029	-4.2101	153	-2.9355	1.7719	-3.9019
94	-2.9511	0.2634	-4.5476	154	0.6248	-3.0326	-0.2156
95	-3.0778	0.3695	-4.7056	155	0.3240	-2.8767	-0.6280
96	-3.0597	0.3719	-4.6774	156	0.4996	-3.0056	-0.3961
97	-0.8603	1.3758	-0.7897	157	4.9797	3.6123	9.2344
98	0.4496	1.4420	1.3513	158	4.2521	5.2650	8.8139
99	0.2073	0.8982	0.7276	159	-2.3227	2.8149	-2.4523
100	1.1500	-1.6055	1.1513	160	-3.0356	2.6110	-3.6417
101	-0.9715	-0.6343	-1.7932	161	0.3857	-3.1220	-0.6023
102	-1.6562	-0.3093	-2.7400	162	1.2464	-3.9444	0.4725
103	-3.0174	0.3655	-4.6156	163	1.6454	-4.2649	0.9818
104	-2.8002	0.3270	-4.2947	164	2.3158	-4.8675	1.8317
105	-0.3135	0.7170	-0.1875	165	0.2680	-2.5813	-0.6959
106	-0.2426	0.0877	-0.3441	166	-1.8952	-0.8485	-3.3602
107	0.0393	0.4924	0.2823	167	-0.2449	-0.8435	-0.7448
108	4.6735	-1.3521	7.0111	168	0.5129	-1.7910	0.0763
109	5.2479	-0.8207	8.1790	169	0.8073	-2.9043	0.0215
110	0.2091	0.1466	0.3734	170	-1.5148	-1.1150	-2.8787
111	-1.2435	0.4383	-1.7885	171	-0.8738	3.8445	0.2109
112	-2.7659	0.4200	-4.2085	172	-3.0135	0.1780	-4.6941
113	-3.0008	0.5087	-4.5471	173	-2.4668	-0.0706	-3.9248
114	-0.3116	-0.1867	-0.5739	174	-2.1504	-0.1542	-3.4565
115	-0.2942	-0.2473	-0.5716	175	-1.9511	0.0739	-3.0537
116	-0.0920	-0.3444	-0.2875	176	-2.9514	0.4320	-4.4953
117	3.5465	-1.6916	5.0296	177	-3.0318	0.4664	-4.6095
118	3.9158	-1.8698	5.5540	178	-3.2916	0.9213	-4.8605
119	3.5683	-2.0144	4.9273	179	-0.1978	0.2887	-0.1849
120	-0.3538	0.5103	-0.3598	180	0.3386	0.4631	0.7535
121	-0.8887	0.7537	-1.1036	181	0.0238	-0.8334	-0.3091
122	-1.8621	0.5584	-2.7196	182	4.3444	-2.1969	6.1131
123	-2.9820	0.8412	-4.3914	183	1.9989	-1.9487	2.4084
124	-0.0671	-1.2090	-0.6154	184	-1.8502	1.3233	-2.4077
125	0.3025	-1.4093	-0.1113	185	-2.8106	1.4776	-3.8335
126	-0.0890	-1.3288	-0.6950	186	0.4473	-2.0024	-0.1144
127	0.1190	-1.4353	-0.4128	187	0.5110	-2.4835	-0.1994
128	2.0067	-2.5099	2.1841	188	0.1859	-2.4705	-0.7101
129	1.8574	-2.6300	1.8931	189	0.1862	-2.7056	-0.7848
130	2.1997	1.1732	3.9040	190	-2.4483	2.7354	-2.6908

191	-2.7356	2.6560	-3.1682	232	0.1373	-2.0272	-0.6402
192	-1.3867	-0.6410	-2.4513	233	-0.0869	0.5583	0.1073
193	-2.1412	1.2296	-2.9423	234	-2.3001	0.5951	-3.3996
194	-3.0463	1.2575	-4.3156	235	-1.5074	0.6270	-2.1269
195	-0.4209	0.0728	-0.6369	236	-2.6557	0.9022	-3.9195
196	-1.4266	1.5737	-1.6057	237	1.2760	-2.1827	1.1478
197	0.3585	-2.5165	-0.4544	238	0.2599	-1.8032	-0.3291
198	3.3890	-4.2442	3.5306	239	1.2894	-2.2433	1.1445
199	-0.7979	-1.5503	-1.9248	240	2.5913	-5.1703	2.1646
200	-1.6420	-1.0284	-3.0485	241	-1.2808	-0.4279	-2.1976
201	-0.6881	3.0143	0.1735	242	2.0757	-1.7050	2.6404
202	-0.9048	2.9334	-0.2125	243	1.5164	-2.3483	1.4849
203	-2.4966	0.1004	-3.9039	244	4.9794	3.6147	9.2492
204	-2.6348	0.2308	-4.0708	245	-1.5025	4.0413	-0.7371
205	-2.5570	0.2114	-3.9562	246	-3.1523	0.3068	-4.8469
206	-1.2353	1.0513	-1.5273	247	0.6173	1.8265	1.7822
207	-1.7399	0.5403	-2.5309	248	-0.5944	0.7182	-0.6485
208	-2.6709	0.8321	-3.9241	249	0.3386	-1.5274	-0.0632
209	-2.5389	0.9168	-3.7457	250	-1.5515	2.5319	-1.5663
210	-1.1482	1.8195	-1.0626	251	-2.9286	1.7371	-3.9009
211	-2.4002	1.6607	-3.1019	252	0.3521	-2.6995	-0.5260
212	-2.6312	-0.3077	-4.3462	253	6.5538	4.2489	11.9485
213	-2.7686	2.9312	-3.1001	254	2.1222	-4.6608	1.6067
214	-2.4358	-0.6297	-4.0996	255	1.5461	3.1785	3.8543
215	-2.3569	0.9629	-3.4426	256	-3.1144	0.3474	-4.8346
216	0.7071	-2.1851	0.2316	257	-2.7506	1.2492	-3.8644
217	1.6850	-2.4786	1.6820	258	5.9372	5.5117	11.5582
218	-0.7288	3.6619	0.3713	259	-0.0012	-0.0012	0.0009
219	-2.8305	2.5697	-3.3463	260	0.0027	0.0067	-0.0081
220	0.7612	-3.2284	-0.0620	261	-0.0044	-0.0030	0.0004
221	2.9464	4.8390	6.8133	262	-0.0039	-0.0033	0.0012
222	-1.1244	2.7046	-0.6740	263	-0.0023	-0.0037	0.0025
223	0.3240	1.4746	1.1579	264	-0.0025	-0.0009	0.0002
224	-2.9000	0.7801	-4.3409	265	0.0049	0.0074	-0.0001
225	0.3978	-1.7096	-0.0714	266	-0.0017	0.0001	-0.0002
226	-2.4750	1.5610	-3.2678	267	-0.0023	-0.0032	0.0015
227	-2.3315	-0.7517	-4.0184	268	0.0005	-0.0006	-0.0000
228	-3.2704	2.3474	-4.1238	269	0.0029	0.0021	-0.0014
229	-3.4820	2.2345	-4.5850	270	-0.0000	0.0000	0.0000
230	3.2443	1.0653	5.7050	271	-0.0000	-0.0000	-0.0000
231	2.3437	3.6669	5.3484				

aX aY aZ
-0.0001 -0.0000 -0.0001
mX mY mZ
5.3141 3.5408 5.3759
CE90 LE90
9.5189 8.8516

The image residuals of intersected GCP

Point	Image	Vx	Vy
1	1	0.159	-3.893
1	2	-0.149	3.883

Point	Image	Vx	Vy
2	1	0.180	-4.408
2	2	-0.169	4.398

Point	Image	Vx	Vy
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3	1	0.044	-1.069
3	2	-0.040	1.066

Point	Image	Vx	Vy
4	1	0.004	-0.103
4	2	-0.004	0.103

Point	Image	Vx	Vy
5	1	0.035	-0.865

5	2	-0.034	0.861
Point	Image	Vx	Vy
6	1	0.040	-0.985
6	2	-0.038	0.979
Point	Image	Vx	Vy
7	1	0.058	-1.463
7	2	-0.057	1.447
Point	Image	Vx	Vy
8	1	0.052	-1.228
8	2	-0.045	1.221
Point	Image	Vx	Vy
9	1	0.051	-1.229
9	2	-0.046	1.222
Point	Image	Vx	Vy
10	1	0.007	-0.156
10	2	-0.006	0.156
Point	Image	Vx	Vy
11	1	0.111	-2.605
11	2	-0.095	2.584
Point	Image	Vx	Vy
12	1	0.122	-2.846
12	2	-0.103	2.818
Point	Image	Vx	Vy
13	1	0.103	-2.474
13	2	-0.093	2.450
Point	Image	Vx	Vy
14	1	0.091	-2.214
14	2	-0.084	2.195
Point	Image	Vx	Vy
15	1	0.066	-1.663
15	2	-0.066	1.644
Point	Image	Vx	Vy
16	1	0.306	-7.914
16	2	-0.318	7.843
Point	Image	Vx	Vy
17	1	-0.011	0.285
17	2	0.012	-0.284
Point	Image	Vx	Vy
18	1	-0.045	1.207
18	2	0.050	-1.196
Point	Image	Vx	Vy
19	1	-0.149	3.894
19	2	0.159	-3.854
Point	Image	Vx	Vy
20	1	-0.100	2.769

20	2	0.119	-2.736
Point	Image	Vx	Vy
21	1	-0.055	1.486
21	2	0.063	-1.468
Point	Image	Vx	Vy
22	1	-0.063	1.726
22	2	0.074	-1.712
Point	Image	Vx	Vy
23	1	-0.069	1.917
23	2	0.083	-1.906
Point	Image	Vx	Vy
24	1	-0.062	1.679
24	2	0.071	-1.667
Point	Image	Vx	Vy
25	1	-0.037	0.973
25	2	0.040	-0.967
Point	Image	Vx	Vy
26	1	-0.002	0.052
26	2	0.002	-0.052
Point	Image	Vx	Vy
27	1	0.010	-0.262
27	2	-0.010	0.261
Point	Image	Vx	Vy
28	1	-0.005	0.137
28	2	0.005	-0.137
Point	Image	Vx	Vy
29	1	0.006	-0.160
29	2	-0.007	0.160
Point	Image	Vx	Vy
30	1	0.016	-0.436
30	2	-0.019	0.439
Point	Image	Vx	Vy
31	1	-0.113	2.576
31	2	0.093	-2.602
Point	Image	Vx	Vy
32	1	-0.018	0.435
32	2	0.017	-0.439
Point	Image	Vx	Vy
33	1	-0.085	2.219
33	2	0.092	-2.236
Point	Image	Vx	Vy
34	1	0.086	-2.253
34	2	-0.094	2.282
Point	Image	Vx	Vy
35	1	0.004	-0.114

35	2	-0.005	0.115
Point	Image	Vx	Vy
36	1	0.049	-1.314
36	2	-0.055	1.326
Point	Image	Vx	Vy
37	1	0.022	-0.615
37	2	-0.027	0.620
Point	Image	Vx	Vy
38	1	-0.100	2.348
38	2	0.088	-2.378
Point	Image	Vx	Vy
39	1	0.012	-0.332
39	2	-0.015	0.332
Point	Image	Vx	Vy
40	1	0.019	-0.523
40	2	-0.022	0.525
Point	Image	Vx	Vy
41	1	0.013	-0.342
41	2	-0.014	0.342
Point	Image	Vx	Vy
42	1	0.001	-0.033
42	2	-0.001	0.033
Point	Image	Vx	Vy
43	1	0.016	-0.399
43	2	-0.015	0.401
Point	Image	Vx	Vy
44	1	-0.064	1.528
44	2	0.057	-1.535
Point	Image	Vx	Vy
45	1	-0.077	1.761
45	2	0.064	-1.772
Point	Image	Vx	Vy
46	1	-0.036	0.822
46	2	0.029	-0.822
Point	Image	Vx	Vy
47	1	-0.010	0.223
47	2	0.008	-0.223
Point	Image	Vx	Vy
48	1	0.013	-0.310
48	2	-0.011	0.309
Point	Image	Vx	Vy
49	1	0.010	-0.275
49	2	-0.011	0.274
Point	Image	Vx	Vy
50	1	-0.054	1.468

50	2	0.063	-1.464
Point	Image	Vx	Vy
51	1	0.052	-1.280
51	2	-0.049	1.268
Point	Image	Vx	Vy
52	1	0.021	-0.518
52	2	-0.020	0.515
Point	Image	Vx	Vy
53	1	-0.037	1.020
53	2	0.044	-1.020
Point	Image	Vx	Vy
54	1	-0.046	1.196
54	2	0.049	-1.195
Point	Image	Vx	Vy
55	1	0.754	-18.851
55	2	-0.740	19.075
Point	Image	Vx	Vy
56	1	-0.007	0.174
56	2	0.007	-0.175
Point	Image	Vx	Vy
57	1	-0.088	2.453
57	2	0.106	-2.432
Point	Image	Vx	Vy
58	1	-0.080	2.216
58	2	0.096	-2.198
Point	Image	Vx	Vy
59	1	-0.073	1.992
59	2	0.085	-1.975
Point	Image	Vx	Vy
60	1	-0.095	2.635
60	2	0.114	-2.618
Point	Image	Vx	Vy
61	1	-0.080	2.222
61	2	0.096	-2.209
Point	Image	Vx	Vy
62	1	-0.077	2.120
62	2	0.091	-2.108
Point	Image	Vx	Vy
63	1	-0.070	1.946
63	2	0.084	-1.937
Point	Image	Vx	Vy
64	1	0.021	-0.578
64	2	-0.025	0.581
Point	Image	Vx	Vy
65	1	0.030	-0.819

65	2	-0.036	0.824
Point	Image	Vx	Vy
66	1	0.030	-0.837
66	2	-0.036	0.842
Point	Image	Vx	Vy
67	1	0.061	-1.699
67	2	-0.074	1.714
Point	Image	Vx	Vy
68	1	0.041	-1.120
68	2	-0.049	1.129
Point	Image	Vx	Vy
69	1	-0.056	1.523
69	2	0.064	-1.512
Point	Image	Vx	Vy
70	1	-0.067	1.830
70	2	0.078	-1.819
Point	Image	Vx	Vy
71	1	-0.030	0.819
71	2	0.035	-0.815
Point	Image	Vx	Vy
72	1	-0.048	1.305
72	2	0.056	-1.299
Point	Image	Vx	Vy
73	1	-0.053	1.437
73	2	0.061	-1.430
Point	Image	Vx	Vy
74	1	-0.043	1.164
74	2	0.049	-1.160
Point	Image	Vx	Vy
75	1	-0.046	1.244
75	2	0.052	-1.238
Point	Image	Vx	Vy
76	1	-0.046	1.215
76	2	0.051	-1.210
Point	Image	Vx	Vy
77	1	-0.025	0.671
77	2	0.028	-0.669
Point	Image	Vx	Vy
78	1	0.002	-0.043
78	2	-0.002	0.043
Point	Image	Vx	Vy
79	1	0.025	-0.678
79	2	-0.029	0.682
Point	Image	Vx	Vy
80	1	0.025	-0.681

80	2	-0.029	0.685
Point	Image	Vx	Vy
81	1	0.033	-0.892
81	2	-0.039	0.898
Point	Image	Vx	Vy
82	1	0.032	-0.873
82	2	-0.038	0.879
Point	Image	Vx	Vy
83	1	0.030	-0.813
83	2	-0.035	0.818
Point	Image	Vx	Vy
84	1	0.051	-1.395
84	2	-0.061	1.406
Point	Image	Vx	Vy
85	1	0.081	-2.241
85	2	-0.098	2.266
Point	Image	Vx	Vy
86	1	0.066	-1.788
86	2	-0.077	1.807
Point	Image	Vx	Vy
87	1	-0.038	1.009
87	2	0.042	-1.002
Point	Image	Vx	Vy
88	1	-0.034	0.901
88	2	0.037	-0.897
Point	Image	Vx	Vy
89	1	-0.032	0.831
89	2	0.034	-0.825
Point	Image	Vx	Vy
90	1	-0.033	0.859
90	2	0.035	-0.854
Point	Image	Vx	Vy
91	1	-0.018	0.469
91	2	0.019	-0.467
Point	Image	Vx	Vy
92	1	-0.035	0.938
92	2	0.039	-0.934
Point	Image	Vx	Vy
93	1	-0.013	0.343
93	2	0.014	-0.342
Point	Image	Vx	Vy
94	1	0.007	-0.194
94	2	-0.008	0.193
Point	Image	Vx	Vy
95	1	0.017	-0.444

95	2	-0.018	0.444
Point	Image	Vx	Vy
96	1	0.020	-0.510
96	2	-0.021	0.509
Point	Image	Vx	Vy
97	1	0.021	-0.546
97	2	-0.023	0.550
Point	Image	Vx	Vy
98	1	0.031	-0.825
98	2	-0.035	0.832
Point	Image	Vx	Vy
99	1	0.022	-0.586
99	2	-0.024	0.590
Point	Image	Vx	Vy
100	1	0.007	-0.191
100	2	-0.008	0.190
Point	Image	Vx	Vy
101	1	-0.020	0.510
101	2	0.021	-0.508
Point	Image	Vx	Vy
102	1	-0.014	0.361
102	2	0.015	-0.360
Point	Image	Vx	Vy
103	1	0.019	-0.497
103	2	-0.020	0.496
Point	Image	Vx	Vy
104	1	0.005	-0.127
104	2	-0.005	0.127
Point	Image	Vx	Vy
105	1	0.023	-0.601
105	2	-0.025	0.605
Point	Image	Vx	Vy
106	1	0.014	-0.361
106	2	-0.015	0.364
Point	Image	Vx	Vy
107	1	0.015	-0.377
107	2	-0.016	0.380
Point	Image	Vx	Vy
108	1	0.025	-0.630
108	2	-0.026	0.637
Point	Image	Vx	Vy
109	1	0.039	-1.023
109	2	-0.042	1.034
Point	Image	Vx	Vy
110	1	0.021	-0.530

110	2	-0.021	0.527
Point	Image	Vx	Vy
111	1	-0.000	0.012
111	2	0.000	-0.012
Point	Image	Vx	Vy
112	1	0.002	-0.051
112	2	-0.002	0.050
Point	Image	Vx	Vy
113	1	0.001	-0.024
113	2	-0.001	0.024
Point	Image	Vx	Vy
114	1	0.005	-0.125
114	2	-0.005	0.126
Point	Image	Vx	Vy
115	1	0.009	-0.233
115	2	-0.009	0.235
Point	Image	Vx	Vy
116	1	0.004	-0.107
116	2	-0.004	0.107
Point	Image	Vx	Vy
117	1	0.002	-0.051
117	2	-0.002	0.051
Point	Image	Vx	Vy
118	1	0.003	-0.085
118	2	-0.003	0.086
Point	Image	Vx	Vy
119	1	-0.007	0.176
119	2	0.007	-0.178
Point	Image	Vx	Vy
120	1	0.011	-0.283
120	2	-0.011	0.282
Point	Image	Vx	Vy
121	1	0.011	-0.275
121	2	-0.011	0.274
Point	Image	Vx	Vy
122	1	0.002	-0.060
122	2	-0.002	0.060
Point	Image	Vx	Vy
123	1	0.002	-0.057
123	2	-0.002	0.057
Point	Image	Vx	Vy
124	1	-0.017	0.412
124	2	0.016	-0.415
Point	Image	Vx	Vy
125	1	-0.001	0.019

125	2	0.001	-0.019
Point	Image	Vx	Vy
126	1	-0.034	0.830
126	2	0.033	-0.836
Point	Image	Vx	Vy
127	1	-0.017	0.423
127	2	0.017	-0.426
Point	Image	Vx	Vy
128	1	-0.030	0.730
128	2	0.029	-0.737
Point	Image	Vx	Vy
129	1	-0.037	0.897
129	2	0.035	-0.906
Point	Image	Vx	Vy
130	1	0.046	-1.116
130	2	-0.042	1.109
Point	Image	Vx	Vy
131	1	-0.001	0.017
131	2	0.001	-0.017
Point	Image	Vx	Vy
132	1	0.000	-0.004
132	2	-0.000	0.004
Point	Image	Vx	Vy
133	1	0.002	-0.049
133	2	-0.002	0.049
Point	Image	Vx	Vy
134	1	0.002	-0.045
134	2	-0.002	0.044
Point	Image	Vx	Vy
135	1	0.014	-0.339
135	2	-0.013	0.338
Point	Image	Vx	Vy
136	1	0.008	-0.194
136	2	-0.007	0.194
Point	Image	Vx	Vy
137	1	0.012	-0.291
137	2	-0.011	0.291
Point	Image	Vx	Vy
138	1	0.012	-0.293
138	2	-0.011	0.293
Point	Image	Vx	Vy
139	1	-0.016	0.380
139	2	0.014	-0.379
Point	Image	Vx	Vy
140	1	-0.043	1.037

140	2	0.040	-1.045
Point	Image	Vx	Vy
141	1	-0.048	1.156
141	2	0.045	-1.166
Point	Image	Vx	Vy
142	1	-0.050	1.198
142	2	0.046	-1.208
Point	Image	Vx	Vy
143	1	-0.055	1.334
143	2	0.051	-1.344
Point	Image	Vx	Vy
144	1	-0.049	1.189
144	2	0.046	-1.199
Point	Image	Vx	Vy
145	1	0.102	-2.383
145	2	-0.086	2.363
Point	Image	Vx	Vy
146	1	0.021	-0.505
146	2	-0.019	0.503
Point	Image	Vx	Vy
147	1	0.007	-0.176
147	2	-0.007	0.176
Point	Image	Vx	Vy
148	1	-0.009	0.220
148	2	0.008	-0.220
Point	Image	Vx	Vy
149	1	-0.011	0.266
149	2	0.010	-0.265
Point	Image	Vx	Vy
150	1	-0.015	0.352
150	2	0.013	-0.352
Point	Image	Vx	Vy
151	1	-0.023	0.533
151	2	0.020	-0.533
Point	Image	Vx	Vy
152	1	-0.015	0.358
152	2	0.013	-0.358
Point	Image	Vx	Vy
153	1	-0.018	0.429
153	2	0.016	-0.429
Point	Image	Vx	Vy
154	1	-0.098	2.291
154	2	0.085	-2.311
Point	Image	Vx	Vy
155	1	-0.101	2.375

155	2	0.088	-2.395
Point	Image	Vx	Vy
156	1	-0.105	2.458
156	2	0.091	-2.479
Point	Image	Vx	Vy
157	1	0.092	-2.134
157	2	-0.077	2.118
Point	Image	Vx	Vy
158	1	0.092	-2.083
158	2	-0.073	2.068
Point	Image	Vx	Vy
159	1	-0.025	0.567
159	2	0.020	-0.566
Point	Image	Vx	Vy
160	1	-0.049	1.114
160	2	0.040	-1.114
Point	Image	Vx	Vy
161	1	-0.123	2.862
161	2	0.105	-2.886
Point	Image	Vx	Vy
162	1	-0.149	3.433
162	2	0.125	-3.465
Point	Image	Vx	Vy
163	1	-0.151	3.466
163	2	0.126	-3.499
Point	Image	Vx	Vy
164	1	-0.166	3.799
164	2	0.138	-3.837
Point	Image	Vx	Vy
165	1	-0.089	2.468
165	2	0.107	-2.451
Point	Image	Vx	Vy
166	1	-0.055	1.509
166	2	0.065	-1.502
Point	Image	Vx	Vy
167	1	-0.016	0.408
167	2	0.016	-0.411
Point	Image	Vx	Vy
168	1	-0.029	0.714
168	2	0.028	-0.720
Point	Image	Vx	Vy
169	1	-0.086	2.377
169	2	0.102	-2.360
Point	Image	Vx	Vy
170	1	-0.063	1.726

170	2	0.074	-1.718
Point	Image	Vx	Vy
171	1	0.030	-0.840
171	2	-0.037	0.845
Point	Image	Vx	Vy
172	1	-0.027	0.734
172	2	0.031	-0.732
Point	Image	Vx	Vy
173	1	-0.017	0.449
173	2	0.019	-0.448
Point	Image	Vx	Vy
174	1	-0.008	0.216
174	2	0.009	-0.215
Point	Image	Vx	Vy
175	1	-0.001	0.014
175	2	0.001	-0.014
Point	Image	Vx	Vy
176	1	0.022	-0.552
176	2	-0.022	0.552
Point	Image	Vx	Vy
177	1	0.025	-0.651
177	2	-0.026	0.650
Point	Image	Vx	Vy
178	1	0.023	-0.590
178	2	-0.024	0.592
Point	Image	Vx	Vy
179	1	0.018	-0.467
179	2	-0.019	0.470
Point	Image	Vx	Vy
180	1	0.018	-0.460
180	2	-0.019	0.464
Point	Image	Vx	Vy
181	1	-0.004	0.105
181	2	0.004	-0.105
Point	Image	Vx	Vy
182	1	0.004	-0.098
182	2	-0.004	0.099
Point	Image	Vx	Vy
183	1	-0.011	0.268
183	2	0.011	-0.271
Point	Image	Vx	Vy
184	1	0.034	-0.824
184	2	-0.031	0.822
Point	Image	Vx	Vy
185	1	-0.017	0.392

185	2	0.015	-0.392
Point	Image	Vx	Vy
186	1	-0.040	0.985
186	2	0.038	-0.992
Point	Image	Vx	Vy
187	1	-0.065	1.546
187	2	0.059	-1.558
Point	Image	Vx	Vy
188	1	-0.072	1.718
188	2	0.065	-1.731
Point	Image	Vx	Vy
189	1	-0.095	2.224
189	2	0.083	-2.242
Point	Image	Vx	Vy
190	1	-0.023	0.519
190	2	0.019	-0.518
Point	Image	Vx	Vy
191	1	-0.033	0.769
191	2	0.028	-0.769
Point	Image	Vx	Vy
192	1	-0.023	0.600
192	2	0.025	-0.598
Point	Image	Vx	Vy
193	1	0.082	-1.976
193	2	-0.075	1.972
Point	Image	Vx	Vy
194	1	-0.007	0.177
194	2	0.007	-0.177
Point	Image	Vx	Vy
195	1	0.018	-0.456
195	2	-0.019	0.459
Point	Image	Vx	Vy
196	1	0.004	-0.094
196	2	-0.004	0.093
Point	Image	Vx	Vy
197	1	-0.070	1.662
197	2	0.063	-1.675
Point	Image	Vx	Vy
198	1	-0.077	2.101
198	2	0.089	-2.083
Point	Image	Vx	Vy
199	1	-0.064	1.739
199	2	0.074	-1.729
Point	Image	Vx	Vy
200	1	-0.065	1.787

200	2	0.077	-1.778
Point	Image	Vx	Vy
201	1	0.033	-0.892
201	2	-0.038	0.897
Point	Image	Vx	Vy
202	1	0.028	-0.753
202	2	-0.032	0.758
Point	Image	Vx	Vy
203	1	-0.006	0.143
203	2	0.006	-0.143
Point	Image	Vx	Vy
204	1	0.005	-0.128
204	2	-0.005	0.128
Point	Image	Vx	Vy
205	1	0.001	-0.022
205	2	-0.001	0.022
Point	Image	Vx	Vy
206	1	0.011	-0.279
206	2	-0.011	0.278
Point	Image	Vx	Vy
207	1	-0.004	0.103
207	2	0.004	-0.103
Point	Image	Vx	Vy
208	1	0.063	-1.542
208	2	-0.060	1.540
Point	Image	Vx	Vy
209	1	0.184	-4.511
209	2	-0.174	4.504
Point	Image	Vx	Vy
210	1	0.009	-0.202
210	2	-0.008	0.202
Point	Image	Vx	Vy
211	1	-0.011	0.255
211	2	0.010	-0.255
Point	Image	Vx	Vy
212	1	-0.017	0.414
212	2	0.016	-0.416
Point	Image	Vx	Vy
213	1	-0.029	0.653
213	2	0.023	-0.653
Point	Image	Vx	Vy
214	1	-0.075	1.710
214	2	0.061	-1.719
Point	Image	Vx	Vy
215	1	0.184	-4.502

215	2	-0.173	4.494
Point	Image	Vx	Vy
216	1	-0.046	1.122
216	2	0.043	-1.131
Point	Image	Vx	Vy
217	1	-0.037	0.916
217	2	0.036	-0.924
Point	Image	Vx	Vy
218	1	0.033	-0.896
218	2	-0.039	0.902
Point	Image	Vx	Vy
219	1	-0.038	0.885
219	2	0.032	-0.884
Point	Image	Vx	Vy
220	1	-0.109	2.550
220	2	0.095	-2.572
Point	Image	Vx	Vy
221	1	0.063	-1.759
221	2	-0.078	1.775
Point	Image	Vx	Vy
222	1	0.012	-0.329
222	2	-0.014	0.331
Point	Image	Vx	Vy
223	1	0.026	-0.676
223	2	-0.028	0.681
Point	Image	Vx	Vy
224	1	0.127	-3.142
224	2	-0.122	3.139
Point	Image	Vx	Vy
225	1	-0.033	0.800
225	2	0.031	-0.806
Point	Image	Vx	Vy
226	1	-0.004	0.101
226	2	0.004	-0.100
Point	Image	Vx	Vy
227	1	-0.052	1.199
227	2	0.043	-1.206
Point	Image	Vx	Vy
228	1	-0.052	1.178
228	2	0.042	-1.179
Point	Image	Vx	Vy
229	1	0.053	-1.439
229	2	-0.061	1.444
Point	Image	Vx	Vy
230	1	0.018	-0.484

230	2	-0.020	0.488
Point	Image	Vx	Vy
231	1	0.054	-1.476
231	2	-0.064	1.489
Point	Image	Vx	Vy
232	1	-0.055	1.474
232	2	0.062	-1.465
Point	Image	Vx	Vy
233	1	0.017	-0.452
233	2	-0.019	0.455
Point	Image	Vx	Vy
234	1	0.006	-0.145
234	2	-0.006	0.145
Point	Image	Vx	Vy
235	1	0.002	-0.057
235	2	-0.002	0.057
Point	Image	Vx	Vy
236	1	0.149	-3.652
236	2	-0.141	3.647
Point	Image	Vx	Vy
237	1	-0.038	0.922
237	2	0.036	-0.930
Point	Image	Vx	Vy
238	1	-0.042	1.032
238	2	0.040	-1.040
Point	Image	Vx	Vy
239	1	-0.040	0.990
239	2	0.039	-0.998
Point	Image	Vx	Vy
240	1	-0.174	3.962
240	2	0.143	-4.003
Point	Image	Vx	Vy
241	1	-0.008	0.214
241	2	0.009	-0.213
Point	Image	Vx	Vy
242	1	-0.021	0.534
242	2	0.021	-0.539
Point	Image	Vx	Vy
243	1	-0.078	1.918
243	2	0.075	-1.935
Point	Image	Vx	Vy
244	1	0.091	-2.111
244	2	-0.076	2.095
Point	Image	Vx	Vy
245	1	0.020	-0.561

245 2 -0.024 0.564

Point	Image	Vx	Vy
246	1	0.001	-0.027
246	2	-0.001	0.027

Point	Image	Vx	Vy
247	1	0.037	-0.987
247	2	-0.042	0.995

Point	Image	Vx	Vy
248	1	0.016	-0.383
248	2	-0.015	0.381

Point	Image	Vx	Vy
249	1	-0.104	2.564
249	2	0.101	-2.583

Point	Image	Vx	Vy
250	1	0.145	-3.380
250	2	-0.123	3.371

Point	Image	Vx	Vy
251	1	-0.012	0.283
251	2	0.010	-0.283

Point	Image	Vx	Vy
252	1	-0.083	1.957
252	2	0.074	-1.973

Point	Image	Vx	Vy
253	1	0.121	-2.787
253	2	-0.099	2.764

Point	Image	Vx	Vy
254	1	-0.164	3.766
254	2	0.137	-3.804

Point	Image	Vx	Vy
255	1	0.052	-1.431
255	2	-0.062	1.443

Point	Image	Vx	Vy
256	1	0.012	-0.298
256	2	-0.012	0.298

Point	Image	Vx	Vy
257	1	0.031	-0.740
257	2	-0.028	0.740

Point	Image	Vx	Vy
258	1	0.107	-2.425
258	2	-0.085	2.405

Mean error of 542 image points: ax=-0.000, ay=-0.000

RMSE of 542 image points: mx=0.083, my=2.104

The coordinates of object points

Point ID	X	Y	Z	Overlap
1	505042.8910	4037516.5530	334.0000	2
2	505094.4580	4037516.0800	334.0000	2

Point	Image	Vx	Vy
259	1	0.001	-0.033
259	2	-0.001	0.033

Point	Image	Vx	Vy
260	1	0.365	-8.894
260	2	-0.339	8.892

Point	Image	Vx	Vy
261	1	0.126	-3.520
261	2	-0.153	3.512

Point	Image	Vx	Vy
262	1	-0.131	3.536
262	2	0.151	-3.546

Point	Image	Vx	Vy
263	1	0.318	-8.634
263	2	-0.368	8.704

Point	Image	Vx	Vy
264	1	-0.012	0.319
264	2	0.013	-0.318

Point	Image	Vx	Vy
265	1	-0.028	0.653
265	2	0.023	-0.648

Point	Image	Vx	Vy
266	1	-0.013	0.338
266	2	0.014	-0.337

Point	Image	Vx	Vy
267	1	0.025	-0.652
267	2	-0.027	0.656

Point	Image	Vx	Vy
268	1	0.001	-0.015
268	2	-0.001	0.015

Point	Image	Vx	Vy
269	1	-0.011	0.263
269	2	0.010	-0.263

Point	Image	Vx	Vy
270	1	-0.275	6.729
270	2	0.260	-6.701

Point	Image	Vx	Vy
271	1	0.118	-2.709
271	2	-0.097	2.708

3	505007.0820	4037333.8840	322.0000	2
4	504713.0510	4037614.9930	313.0000	2
5	504601.8990	4037669.2790	312.0000	2
6	504340.9410	4037581.9580	315.0000	2
7	503546.4500	4037696.7940	318.0000	2
8	504478.7140	4037059.9280	316.0000	2
9	504376.8300	4037267.7550	314.0000	2
10	505031.1530	4036802.0190	316.0000	2
11	504065.0060	4036910.2330	315.0000	2
12	503746.9370	4036772.5050	317.0000	2
13	503729.2680	4037192.5400	316.0000	2
14	503942.2510	4037348.2760	315.0000	2
15	503389.4730	4037819.3980	318.0000	2
16	503808.0140	4038084.4600	316.0000	2
17	504560.0830	4038214.9560	314.0000	2
18	503804.0810	4038515.1330	319.0000	2
19	503608.5600	4038248.3830	318.0000	2
20	503281.3510	4038858.2580	316.0000	2
21	503261.1760	4038610.6980	317.0000	2
22	503902.7970	4038860.3510	318.0000	2
23	504362.1760	4038971.5810	310.0000	2
24	504129.2060	4038708.1280	319.0000	2
25	504257.1420	4038479.5220	316.0000	2
26	504293.1000	4038251.4910	315.0000	2
27	504745.8870	4037983.4050	312.0000	2
28	505231.9530	4038041.9560	314.0000	2
29	505051.9480	4038347.4890	316.0000	2
30	506309.0260	4039214.0090	316.0000	2
31	507272.1840	4036813.5980	315.0000	2
32	506873.0320	4037624.2000	316.0000	2
33	506794.4240	4038491.2990	316.0000	2
34	507639.9260	4038506.3540	319.0000	2
35	507298.6220	4038476.2790	318.0000	2
36	507038.2880	4038695.1040	317.0000	2
37	506963.1070	4039105.8870	319.0000	2
38	507661.3230	4037215.6830	316.0000	2
39	505697.2910	4039181.2020	317.0000	2
40	505887.7620	4038816.2940	319.0000	2
41	505774.1650	4038371.0970	317.0000	2
42	505891.5230	4037879.9820	316.0000	2
43	506063.1880	4037621.5870	318.0000	2
44	506215.7290	4037264.6540	317.0000	2
45	506582.2600	4036829.4190	317.0000	2
46	505456.8260	4036646.0290	309.0000	2
47	505439.1030	4037015.5450	312.0000	2
48	504887.1530	4036988.2390	311.0000	2
49	504841.9650	4038413.2080	311.0000	2
50	505017.5520	4038866.7640	315.0000	2
51	503798.0520	4037531.3530	315.0000	2
52	504236.9120	4037747.3880	317.0000	2
53	505431.5500	4038920.9460	318.0000	2
54	505307.0470	4038392.0040	315.0000	2
55	507538.4570	4037915.1830	317.0000	2
56	506170.9790	4038500.7010	319.0000	2
57	503896.5982	4038964.7259	321.7708	2
58	503975.4732	4038959.1282	322.2420	2
59	503850.6524	4038826.6041	321.3275	2
60	504219.9102	4039028.1599	321.6138	2
61	504349.4360	4038983.7908	321.1873	2
62	504332.6992	4038937.3326	321.3574	2

63	504528.6350	4038996.4607	321.4757	2
64	506307.4179	4039193.5892	315.8467	2
65	506505.7114	4039121.7306	316.3972	2
66	506483.9245	4039094.2069	316.2101	2
67	506935.6149	4039170.9978	315.7817	2
68	506837.2788	4039113.6835	315.4551	2
69	504100.9572	4038694.6551	320.6899	2
70	504355.4353	4038766.0624	320.1699	2
71	504476.1070	4038659.9088	319.7792	2
72	504681.4624	4038827.9786	319.9402	2
73	504612.5398	4038808.2822	321.2268	2
74	504665.6013	4038733.4878	319.9729	2
75	504604.3792	4038626.2275	319.4817	2
76	504585.8066	4038573.8820	320.4213	2
77	504754.8856	4038596.4529	319.4510	2
78	504936.6487	4038720.6982	319.3316	2
79	506452.1786	4038986.2734	316.4122	2
80	506476.0784	4038907.1442	316.6421	2
81	506567.4917	4039034.7741	316.5862	2
82	506549.8028	4038983.2104	316.6139	2
83	506525.8766	4038882.3604	317.3055	2
84	506789.7153	4039076.1077	316.4685	2
85	507365.1661	4039133.1058	315.7058	2
86	507308.8519	4038912.0484	317.0937	2
87	504243.2358	4038425.7213	319.1813	2
88	504455.5377	4038404.0923	319.6502	2
89	504325.3521	4038371.9055	319.5820	2
90	504323.6088	4038328.4414	318.9269	2
91	504585.9439	4038240.5173	318.7377	2
92	504651.4179	4038491.0217	319.7337	2
93	504888.6753	4038507.6036	318.1052	2
94	505031.1239	4038382.7315	319.5177	2
95	505095.1440	4038341.8573	318.9228	2
96	505104.4794	4038306.1063	318.5506	2
97	506522.9779	4038566.7777	318.5406	2
98	506722.9198	4038644.4245	318.4241	2
99	506696.1338	4038505.7433	319.6222	2
100	504295.9251	4038188.8026	318.0236	2
101	504625.7490	4038192.4754	318.5936	2
102	504759.5743	4038196.0742	318.7843	2
103	505109.5823	4038259.5196	318.6448	2
104	505088.7031	4038121.4838	319.1636	2
105	506620.9101	4038426.8018	319.9186	2
106	506644.8194	4038254.9595	320.6923	2
107	506678.4798	4038391.5498	319.6421	2
108	507259.3311	4038305.5606	322.2235	2
109	507301.0629	4038447.7564	321.7307	2
110	504566.3082	4037658.4403	317.1732	2
111	504817.7349	4037683.7095	317.5908	2
112	505126.7600	4037983.0417	316.5265	2
113	505223.9875	4037977.7811	318.7832	2
114	506641.3208	4038163.0532	320.4882	2
115	506645.9221	4038145.8147	320.9463	2
116	506679.4886	4038137.9756	320.9051	2
117	507158.7166	4038141.0541	323.0002	2
118	507200.6823	4038132.4673	323.3315	2
119	507170.8458	4038065.8791	323.0931	2
120	504676.9156	4037575.6531	316.7783	2
121	504784.8282	4037523.2997	316.5809	2
122	504952.8350	4037692.3603	317.6637	2

123	505358.9018	4037567.2729	318.7764	2
124	506718.2182	4037838.0753	322.8088	2
125	506778.0329	4037829.2483	323.0733	2
126	506722.0867	4037785.5714	323.4384	2
127	506755.3953	4037784.7947	323.0057	2
128	507031.3469	4037734.7091	323.7049	2
129	507021.2400	4037670.5824	322.0531	2
130	504370.9756	4037253.8647	314.2308	2
131	504869.4258	4037379.0524	317.1583	2
132	504890.1838	4037276.9226	314.8565	2
133	504931.3408	4037281.6993	314.9588	2
134	504886.2986	4037102.5153	314.0449	2
135	505351.1581	4037424.0188	318.7301	2
136	505352.8953	4037393.9679	315.7363	2
137	505339.7050	4037330.4479	317.1369	2
138	505314.6873	4037322.3008	316.6485	2
139	505354.8671	4037181.5031	317.0025	2
140	506834.9852	4037594.5942	321.9248	2
141	506918.6477	4037597.0236	323.1630	2
142	506890.8359	4037526.0696	322.9628	2
143	506817.7388	4037499.5166	322.9622	2
144	506896.0845	4037593.6549	322.7673	2
145	503984.5359	4036819.3483	308.1492	2
146	504482.9746	4037014.9861	311.0539	2
147	504974.4961	4037058.2002	314.9973	2
148	505228.3233	4037112.4304	316.4822	2
149	505228.1297	4037037.0300	316.2140	2
150	505372.4038	4037154.4149	317.1772	2
151	505409.6507	4037159.8573	317.2778	2
152	505378.2928	4037095.9118	316.7924	2
153	505438.0154	4037016.3082	318.0058	2
154	506941.3174	4037177.7846	325.2214	2
155	506902.8987	4037143.1990	325.5101	2
156	506930.6520	4037141.6539	325.9462	2
157	504147.1110	4036716.3116	309.2092	2
158	504259.7599	4036450.8079	308.7855	2
159	505237.1813	4036773.3686	315.7677	2
160	505496.2235	4036684.4155	318.4562	2
161	506940.8794	4037017.1356	325.9119	2
162	507092.1578	4036913.0438	327.6149	2
163	507149.6208	4036900.8480	328.3797	2
164	507249.8744	4036845.5900	329.5260	2
165	504177.7426	4038972.9432	321.4248	2
166	504560.2097	4038881.6506	320.1821	2
167	506675.3761	4037946.1294	322.0513	2
168	506825.7927	4037723.0123	323.6744	2
169	504118.4226	4038934.7831	321.6330	2
170	504503.7185	4038845.4042	320.9124	2
171	506514.8619	4039100.6220	316.4975	2
172	504883.0470	4038740.9082	318.8539	2
173	504877.9728	4038403.7512	319.1910	2
174	504841.7382	4038283.6076	318.2352	2
175	504883.3798	4038012.4251	317.4795	2
176	505164.8787	4038071.2606	318.7569	2
177	505197.3145	4038074.8356	319.0234	2
178	505888.8443	4038260.5024	317.9071	2
179	506647.0337	4038317.5030	320.0318	2
180	506722.2472	4038405.5797	318.4344	2
181	506713.9813	4037991.0940	322.3658	2
182	507251.5753	4038095.8927	323.3740	2

183	507005.3250	4037907.6339	324.1234	2
184	505031.4957	4037333.7021	315.7032	2
185	505359.7088	4037183.6582	316.8954	2
186	506829.9074	4037625.0925	321.9588	2
187	506874.6845	4037424.7647	323.7426	2
188	506843.0641	4037324.1109	324.1128	2
189	506871.1415	4037188.2908	324.9464	2
190	505274.3166	4036778.7971	315.9183	2
191	505371.8747	4036749.4915	316.2406	2
192	504657.4408	4038339.2209	318.1147	2
193	505100.4935	4037378.1420	317.7202	2
194	505472.7734	4037230.1616	317.8392	2
195	506617.2902	4038233.3222	320.4353	2
196	504951.1759	4037237.1950	315.5940	2
197	506862.9723	4037360.6643	323.6032	2
198	503860.8047	4038779.3336	320.4215	2
199	504409.1302	4038764.5420	320.3323	2
200	504522.1161	4038860.5375	321.6612	2
201	506543.8277	4038941.5340	317.0356	2
202	506509.0996	4038921.6156	317.0205	2
203	504957.8476	4038213.7505	318.2419	2
204	505025.5857	4038142.6537	318.4943	2
205	505009.8870	4038121.2496	318.7210	2
206	504874.4895	4037427.0805	317.4459	2
207	504924.8265	4037687.1246	317.1757	2
208	505217.7916	4037596.5148	319.7951	2
209	505184.3825	4037551.9278	317.9485	2
210	504907.1640	4037156.0131	314.5782	2
211	505213.9548	4037163.0691	316.6467	2
212	506213.7207	4037314.4302	319.2143	2
213	505387.8563	4036660.9771	316.9735	2
214	506429.2889	4036746.8597	322.5429	2
215	505132.5354	4037522.0212	316.4715	2
216	506872.1405	4037608.5750	322.7423	2
217	506995.5123	4037692.3913	322.6109	2
218	506537.3995	4039066.4971	316.3429	2
219	505407.4560	4036753.6409	317.2156	2
220	506973.2590	4037124.2545	325.5907	2
221	506998.8885	4039301.7123	314.8994	2
222	506472.2521	4038868.2714	316.6954	2
223	506705.0160	4038644.7631	318.2278	2
224	505296.8150	4037640.7256	312.0804	2
225	506806.8139	4037732.3789	323.4858	2
226	505232.3744	4037196.3036	315.5008	2
227	506448.0185	4036783.7484	322.8420	2
228	505631.9313	4036655.8037	317.7692	2
229	505909.3802	4038777.7243	316.6031	2
230	507067.1020	4038692.4944	319.1178	2
231	506939.7060	4039112.9998	316.0274	2
232	504298.0696	4038665.7222	320.0908	2
233	506658.5930	4038399.4026	319.7183	2
234	505060.8605	4037722.2691	317.9347	2
235	504888.9683	4037621.5436	318.2078	2
236	505224.3186	4037556.2163	318.0633	2
237	506936.2520	4037722.2397	323.8432	2
238	506794.7865	4037666.3193	322.1908	2
239	506940.4572	4037703.8159	322.8869	2
240	507295.5484	4036797.9456	330.0114	2
241	504694.4794	4038156.5293	317.5652	2
242	507003.7137	4037987.4024	322.2611	2

243	506967.0282	4037712.4768	315.5857	2
244	504147.4926	4036713.9980	309.2076	2
245	506412.0166	4039136.9817	316.5655	2
246	504926.1011	4038739.7409	319.2828	2
247	506741.8090	4038732.7239	318.4673	2
248	504731.8896	4037515.6173	316.0402	2
249	506783.3060	4037798.9575	309.9281	2
250	505026.5589	4036895.6174	267.9588	2
251	505432.0077	4037031.0512	317.6451	2
252	506882.1718	4037261.6148	324.3609	2
253	504011.2885	4036596.2671	306.3991	2
254	507217.1078	4036882.6080	329.3633	2
255	506849.5447	4039014.9190	315.9370	2
256	505942.1834	4037825.1008	317.8201	2
257	505312.2208	4037322.3373	321.0007	2
258	504095.1286	4036409.5062	305.9175	2
259	506646.4053	4038019.5715	320.2800	2
260	505398.7748	4037483.5694	318.1728	2
261	504968.3628	4039134.9284	308.5868	2
262	505891.6732	4038831.2768	314.2652	2
263	506817.5122	4038882.5068	332.2422	2
264	505001.1387	4038545.7233	315.6698	2
265	504103.1865	4036617.6229	363.5526	2
266	504870.0135	4038316.3410	315.7135	2
267	506513.3137	4038603.1763	317.4795	2
268	505915.7034	4037861.1149	311.9026	2
269	505184.4898	4037197.4582	312.8917	2
270	504698.4655	4037530.4738	334.2671	2
271	505433.3822	4036710.1410	315.2334	2

The total object points = 271

The residuals of image points

Point	Image	Vx	Vy	7	2	-1.248	1.543
1	1	-13.964	-4.934				
1	2	-3.959	3.272				
Point	Image	Vx	Vy				
2	1	-15.229	-5.096				
2	2	-5.701	4.128				
Point	Image	Vx	Vy				
3	1	-4.875	-3.415				
3	2	-1.972	-1.154				
Point	Image	Vx	Vy				
4	1	0.943	-1.997				
4	2	-1.520	-1.897				
Point	Image	Vx	Vy				
5	1	-0.137	-1.369				
5	2	-1.643	0.298				
Point	Image	Vx	Vy				
6	1	-0.628	-1.972				
6	2	-3.489	-0.121				
Point	Image	Vx	Vy				
7	1	3.784	-1.173				
Point	Image	Vx	Vy				
8	1	-1.095	-2.249				
8	2	-1.971	0.172				
Point	Image	Vx	Vy				
9	1	-1.478	5.094				
9	2	-2.737	7.546				
Point	Image	Vx	Vy				
10	1	-3.934	-2.465				
10	2	-2.791	-2.088				
Point	Image	Vx	Vy				
11	1	-1.186	-4.500				
11	2	-3.069	0.619				
Point	Image	Vx	Vy				
12	1	0.840	-5.944				
12	2	-2.224	-0.420				
Point	Image	Vx	Vy				
13	1	1.606	-2.922				
13	2	-3.964	1.788				

Point	Image	Vx	Vy
14	1	1.105	-3.689
14	2	-4.412	0.500

Point	Image	Vx	Vy
15	1	5.364	-1.284
15	2	-1.667	1.752

Point	Image	Vx	Vy
16	1	0.704	-12.773
16	2	1.538	2.999

Point	Image	Vx	Vy
17	1	0.463	-0.447
17	2	-1.303	-1.091

Point	Image	Vx	Vy
18	1	-1.920	4.085
18	2	-3.502	1.629

Point	Image	Vx	Vy
19	1	1.276	7.694
19	2	-2.169	-0.165

Point	Image	Vx	Vy
20	1	3.135	7.605
20	2	-4.013	1.861

Point	Image	Vx	Vy
21	1	12.199	6.735
21	2	4.129	3.561

Point	Image	Vx	Vy
22	1	-0.096	6.241
22	2	-1.439	2.777

Point	Image	Vx	Vy
23	1	9.524	4.871
23	2	7.022	1.018

Point	Image	Vx	Vy
24	1	-0.342	2.436
24	2	-1.221	-0.949

Point	Image	Vx	Vy
25	1	-0.801	2.537
25	2	-2.462	0.532

Point	Image	Vx	Vy
26	1	2.053	-0.154
26	2	-0.734	-0.369

Point	Image	Vx	Vy
27	1	-5.107	-7.052
27	2	-8.341	-6.686

Point	Image	Vx	Vy
28	1	0.042	-2.125
28	2	-1.436	-2.461

Point	Image	Vx	Vy
29	1	-2.760	-0.640
29	2	-1.930	-0.294

Point	Image	Vx	Vy
30	1	-9.642	-1.047
30	2	-5.958	-0.084

Point	Image	Vx	Vy
31	1	7.529	9.239
31	2	2.519	3.749

Point	Image	Vx	Vy
32	1	3.364	2.260
32	2	0.524	1.253

Point	Image	Vx	Vy
33	1	-2.149	1.778
33	2	-5.600	-2.830

Point	Image	Vx	Vy
34	1	9.784	0.910
34	2	3.022	5.165

Point	Image	Vx	Vy
35	1	10.802	0.942
35	2	6.782	1.027

Point	Image	Vx	Vy
36	1	1.099	2.648
36	2	-0.462	5.194

Point	Image	Vx	Vy
37	1	2.717	-0.653
37	2	1.427	0.547

Point	Image	Vx	Vy
38	1	10.881	7.521
38	2	1.556	2.323

Point	Image	Vx	Vy
39	1	-3.206	-2.252
39	2	-0.036	-1.470

Point	Image	Vx	Vy
40	1	-2.836	-8.738
40	2	-2.938	-7.685

Point	Image	Vx	Vy
41	1	-3.892	-0.894
41	2	-0.941	-0.097

Point	Image	Vx	Vy
42	1	5.338	-6.726
42	2	4.536	-6.677

Point	Image	Vx	Vy
43	1	0.360	-0.893
43	2	1.065	-0.063

Point	Image	Vx	Vy
44	1	2.458	2.669
44	2	1.685	-0.443

Point	Image	Vx	Vy
45	1	2.218	2.868
45	2	2.975	-0.667

Point	Image	Vx	Vy
46	1	-2.713	9.102
46	2	-2.574	7.485

Point	Image	Vx	Vy
47	1	-0.555	-1.102
47	2	-1.747	-1.590

Point	Image	Vx	Vy
48	1	0.940	-1.866
48	2	-1.762	-1.356

Point	Image	Vx	Vy
49	1	-2.168	0.872
49	2	-4.127	1.337

Point	Image	Vx	Vy
50	1	-0.554	-1.572
50	2	-0.831	-4.530

Point	Image	Vx	Vy
51	1	2.320	-0.878
51	2	-2.356	1.491

Point	Image	Vx	Vy
52	1	-1.106	2.178
52	2	-1.894	3.201

Point	Image	Vx	Vy
53	1	-14.426	-2.856
53	2	-3.989	-4.542

Point	Image	Vx	Vy
54	1	9.007	-0.472
54	2	2.590	-3.106

Point	Image	Vx	Vy
55	1	-15.690	-19.894
55	2	-2.575	18.627

Point	Image	Vx	Vy
56	1	1.709	-5.485
56	2	4.379	-5.694

Point	Image	Vx	Vy
57	1	-0.033	0.838
57	2	-1.512	-4.132

Point	Image	Vx	Vy
58	1	-0.027	0.713
58	2	-1.050	-3.765

Point	Image	Vx	Vy
59	1	-0.013	0.411
59	2	-2.136	-3.667

Point	Image	Vx	Vy
60	1	-0.062	1.453
60	2	0.448	-3.795

Point	Image	Vx	Vy
61	1	-0.051	1.222
61	2	0.953	-3.179

Point	Image	Vx	Vy
62	1	-0.045	1.101
62	2	0.791	-3.104

Point	Image	Vx	Vy
63	1	-0.049	1.184
63	2	1.679	-2.633

Point	Image	Vx	Vy
64	1	-0.049	1.182
64	2	1.252	2.389

Point	Image	Vx	Vy
65	1	-0.040	0.981
65	2	0.360	2.633

Point	Image	Vx	Vy
66	1	-0.034	0.868
66	2	0.475	2.561

Point	Image	Vx	Vy
67	1	-0.027	0.706
67	2	-2.229	4.007

Point	Image	Vx	Vy
68	1	-0.041	1.007
68	2	-1.515	3.178

Point	Image	Vx	Vy
69	1	-0.010	0.327
69	2	-0.874	-2.758

Point	Image	Vx	Vy
70	1	-0.034	0.872
70	2	0.589	-2.762

Point	Image	Vx	Vy
71	1	0.004	0.016
71	2	0.900	-1.587

Point	Image	Vx	Vy
72	1	-0.026	0.700
72	2	1.922	-1.828

Point	Image	Vx	Vy
73	1	-0.028	0.752
73	2	1.668	-2.050

Point	Image	Vx	Vy
74	1	-0.019	0.534
74	2	1.733	-1.722

Point	Image	Vx	Vy
75	1	-0.021	0.565
75	2	1.373	-1.866

Point	Image	Vx	Vy
76	1	-0.019	0.531
76	2	1.223	-1.849

Point	Image	Vx	Vy
77	1	-0.001	0.124
77	2	1.813	-1.144

Point	Image	Vx	Vy
78	1	0.024	-0.415
78	2	2.404	-0.228

Point	Image	Vx	Vy
79	1	-0.028	0.726
79	2	0.667	2.109

Point	Image	Vx	Vy
80	1	-0.020	0.557
80	2	0.586	1.942

Point	Image	Vx	Vy
81	1	-0.028	0.743
81	2	0.082	2.530

Point	Image	Vx	Vy
82	1	-0.022	0.613
82	2	0.194	2.367

Point	Image	Vx	Vy
83	1	-0.013	0.406
83	2	0.357	2.048

Point	Image	Vx	Vy
84	1	-0.021	0.570
84	2	-1.206	3.309

Point	Image	Vx	Vy
85	1	-0.016	0.461
85	2	-5.522	4.707

Point	Image	Vx	Vy
86	1	-0.000	0.098
86	2	-4.760	3.476

Point	Image	Vx	Vy
87	1	-0.004	0.145
87	2	-0.596	-1.900

Point	Image	Vx	Vy
88	1	-0.006	0.199
88	2	0.416	-1.588

Point	Image	Vx	Vy
89	1	-0.000	0.067
89	2	-0.266	-1.607

Point	Image	Vx	Vy
90	1	-0.004	0.132
90	2	-0.344	-1.602

Point	Image	Vx	Vy
91	1	0.004	-0.053
91	2	0.724	-0.962

Point	Image	Vx	Vy
92	1	-0.011	0.329
92	2	1.340	-1.493

Point	Image	Vx	Vy
93	1	0.008	-0.100
93	2	2.072	-0.700

Point	Image	Vx	Vy
94	1	0.026	-0.551
94	2	2.247	-0.072

Point	Image	Vx	Vy
95	1	0.035	-0.770
95	2	2.326	0.214

Point	Image	Vx	Vy
96	1	0.037	-0.831
96	2	2.310	0.283

Point	Image	Vx	Vy
97	1	0.004	-0.008
97	2	0.528	1.108

Point	Image	Vx	Vy
98	1	0.005	-0.031
98	2	-0.510	1.602

Point	Image	Vx	Vy
99	1	0.007	-0.103
99	2	-0.264	1.061

Point	Image	Vx	Vy
100	1	0.033	-0.791
100	2	-0.764	-0.447

Point	Image	Vx	Vy
101	1	-0.000	0.039
101	2	0.822	-0.950

Point	Image	Vx	Vy
102	1	0.004	-0.063
102	2	1.318	-0.733

Point	Image	Vx	Vy
103	1	0.036	-0.814
103	2	2.279	0.272

Point	Image	Vx	Vy
104	1	0.018	-0.426
104	2	2.132	-0.087

Point	Image	Vx	Vy
105	1	0.015	-0.296
105	2	0.156	0.915

Point	Image	Vx	Vy
106	1	0.016	-0.357
106	2	0.165	0.375

Point	Image	Vx	Vy
107	1	0.008	-0.124
107	2	-0.090	0.628

Point	Image	Vx	Vy
108	1	0.022	-0.504
108	2	-3.563	0.618

Point	Image	Vx	Vy
109	1	0.024	-0.531
109	2	-4.075	1.357

Point	Image	Vx	Vy
110	1	0.013	-0.426
110	2	-0.190	0.625

Point	Image	Vx	Vy
111	1	-0.003	0.025
111	2	0.927	0.038

Point	Image	Vx	Vy
112	1	0.012	-0.298
112	2	2.102	-0.113

Point	Image	Vx	Vy
113	1	0.011	-0.266
113	2	2.279	-0.128

Point	Image	Vx	Vy
114	1	0.012	-0.270
114	2	0.252	-0.007

Point	Image	Vx	Vy
115	1	0.017	-0.405
115	2	0.239	0.075

Point	Image	Vx	Vy
116	1	0.013	-0.292
116	2	0.095	-0.073

Point	Image	Vx	Vy
117	1	0.012	-0.290
117	2	-2.629	-0.291

Point	Image	Vx	Vy
118	1	0.015	-0.350
118	2	-2.904	-0.293

Point	Image	Vx	Vy
119	1	0.009	-0.221
119	2	-2.610	-0.676

Point	Image	Vx	Vy
120	1	0.000	-0.090
120	2	0.224	0.484

Point	Image	Vx	Vy
121	1	-0.001	-0.049
121	2	0.617	0.526

Point	Image	Vx	Vy
122	1	0.002	-0.089
122	2	1.393	0.086

Point	Image	Vx	Vy
123	1	0.003	-0.128
123	2	2.240	0.072

Point	Image	Vx	Vy
124	1	0.007	-0.199
124	2	0.169	-1.016

Point	Image	Vx	Vy
125	1	0.023	-0.631
125	2	-0.116	-0.669

Point	Image	Vx	Vy
126	1	-0.006	0.157
126	2	0.211	-1.498

Point	Image	Vx	Vy
127	1	0.009	-0.270
127	2	0.044	-1.113

Point	Image	Vx	Vy
128	1	0.006	-0.181
128	2	-1.327	-1.693

Point	Image	Vx	Vy
129	1	0.002	-0.098
129	2	-1.195	-1.941

Point	Image	Vx	Vy
130	1	0.001	-0.193
130	2	-1.826	1.972

Point	Image	Vx	Vy
131	1	-0.018	0.406
131	2	0.805	0.405

Point	Image	Vx	Vy
132	1	-0.022	0.525
132	2	0.787	0.565

Point	Image	Vx	Vy
133	1	-0.019	0.443
133	2	0.943	0.579

Point	Image	Vx	Vy
134	1	-0.031	0.780
134	2	0.606	0.895

Point	Image	Vx	Vy
135	1	0.007	-0.295
135	2	2.144	0.465

Point	Image	Vx	Vy
136	1	0.001	-0.128
136	2	2.139	0.342

Point	Image	Vx	Vy
137	1	0.002	-0.154
137	2	2.079	0.508

Point	Image	Vx	Vy
138	1	0.001	-0.130
138	2	2.028	0.534

Point	Image	Vx	Vy
139	1	-0.026	0.665
139	2	2.057	-0.017

Point	Image	Vx	Vy
140	1	-0.004	0.083
140	2	-0.138	-2.000

Point	Image	Vx	Vy
141	1	-0.006	0.145
141	2	-0.549	-2.193

Point	Image	Vx	Vy
142	1	-0.006	0.132
142	2	-0.334	-2.282

Point	Image	Vx	Vy
143	1	-0.012	0.304
143	2	0.047	-2.369

Point	Image	Vx	Vy
144	1	-0.008	0.190
144	2	-0.430	-2.209

Point	Image	Vx	Vy
145	1	-0.010	0.024
145	2	-5.293	4.605

Point	Image	Vx	Vy
146	1	-0.035	0.867
146	2	-1.473	1.831

Point	Image	Vx	Vy
147	1	-0.026	0.646
147	2	0.898	1.035

Point	Image	Vx	Vy
148	1	-0.028	0.712
148	2	1.733	0.338

Point	Image	Vx	Vy
149	1	-0.033	0.867
149	2	1.690	0.400

Point	Image	Vx	Vy
150	1	-0.025	0.653
150	2	2.076	0.027

Point	Image	Vx	Vy
151	1	-0.030	0.793
151	2	2.151	-0.193

Point	Image	Vx	Vy
152	1	-0.028	0.724
152	2	2.061	0.085

Point	Image	Vx	Vy
153	1	-0.031	0.836
153	2	2.140	0.056

Point	Image	Vx	Vy
154	1	-0.031	0.896
154	2	-0.162	-3.707

Point	Image	Vx	Vy
155	1	-0.034	1.008
155	2	0.061	-3.754

Point	Image	Vx	Vy
156	1	-0.036	1.056
156	2	-0.063	-3.877

Point	Image	Vx	Vy
157	1	-0.022	0.414
157	2	-4.198	4.542

Point	Image	Vx	Vy
158	1	-0.043	1.165
158	2	-3.779	5.214

Point	Image	Vx	Vy
159	1	-0.053	1.594
159	2	1.574	0.520

Point	Image	Vx	Vy
160	1	-0.061	1.932
160	2	2.156	-0.220

Point	Image	Vx	Vy
161	1	-0.045	1.387
161	2	0.043	-4.354

Point	Image	Vx	Vy
162	1	-0.053	1.694
162	2	-0.548	-5.217

Point	Image	Vx	Vy
163	1	-0.051	1.632
163	2	-0.832	-5.354

Point	Image	Vx	Vy
164	1	-0.054	1.777
164	2	-1.299	-5.895

Point	Image	Vx	Vy
165	1	-0.051	1.237
165	2	0.123	-3.691

Point	Image	Vx	Vy
166	1	-0.029	0.772
166	2	1.600	-2.176

Point	Image	Vx	Vy
167	1	0.002	-0.051
167	2	0.276	-0.857

Point	Image	Vx	Vy
168	1	0.003	-0.089
168	2	-0.223	-1.527

Point	Image	Vx	Vy
169	1	-0.045	1.078
169	2	-0.270	-3.686

Point	Image	Vx	Vy
170	1	-0.037	0.922
170	2	1.340	-2.473

Point	Image	Vx	Vy
171	1	-0.037	0.915
171	2	0.323	2.607

Point	Image	Vx	Vy
172	1	-0.010	0.319
172	2	2.343	-1.051

Point	Image	Vx	Vy
173	1	0.002	0.007
173	2	1.928	-0.813

Point	Image	Vx	Vy
174	1	0.011	-0.214
174	2	1.680	-0.578

Point	Image	Vx	Vy
175	1	0.011	-0.270
175	2	1.502	-0.238

Point	Image	Vx	Vy
176	1	0.033	-0.825
176	2	2.224	0.369

Point	Image	Vx	Vy
177	1	0.037	-0.920
177	2	2.279	0.473

Point	Image	Vx	Vy
178	1	0.030	-0.683
178	2	2.450	0.600

Point	Image	Vx	Vy
179	1	0.017	-0.355
179	2	0.108	0.586

Point	Image	Vx	Vy
180	1	0.010	-0.171
180	2	-0.324	0.739

Point	Image	Vx	Vy
181	1	0.012	-0.304
181	2	0.054	-0.510

Point	Image	Vx	Vy
182	1	0.019	-0.454
182	2	-3.213	-0.381

Point	Image	Vx	Vy
183	1	0.014	-0.363
183	2	-1.386	-0.953

Point	Image	Vx	Vy
184	1	0.012	-0.473
184	2	1.298	1.224

Point	Image	Vx	Vy
185	1	-0.026	0.670
185	2	2.067	-0.037

Point	Image	Vx	Vy
186	1	-0.003	0.066
186	2	-0.145	-1.912

Point	Image	Vx	Vy
187	1	-0.015	0.400
187	2	-0.138	-2.704

Point	Image	Vx	Vy
188	1	-0.019	0.526
188	2	0.119	-2.914

Point	Image	Vx	Vy
189	1	-0.031	0.918
189	2	0.151	-3.537

Point	Image	Vx	Vy
190	1	-0.050	1.485
190	2	1.677	0.511

Point	Image	Vx	Vy
191	1	-0.055	1.653
191	2	1.913	0.185

Point	Image	Vx	Vy
192	1	-0.000	0.056
192	2	1.147	-1.098

Point	Image	Vx	Vy
193	1	0.056	-1.724
193	2	1.496	2.285

Point	Image	Vx	Vy
194	1	-0.014	0.306
194	2	2.264	0.036

Point	Image	Vx	Vy
195	1	0.021	-0.490
195	2	0.301	0.439

Point	Image	Vx	Vy
196	1	-0.020	0.452
196	2	0.971	0.679

Point	Image	Vx	Vy
197	1	-0.018	0.475
197	2	-0.013	-2.857

Point	Image	Vx	Vy
198	1	-0.022	0.573
198	2	-2.163	-3.723

Point	Image	Vx	Vy
199	1	-0.034	0.840
199	2	0.822	-2.602

Point	Image	Vx	Vy
200	1	-0.041	1.003
200	2	1.434	-2.509

Point	Image	Vx	Vy
201	1	-0.017	0.486
201	2	0.242	2.280

Point	Image	Vx	Vy
202	1	-0.020	0.547
202	2	0.425	2.071

Point	Image	Vx	Vy
203	1	0.010	-0.218
203	2	1.925	-0.428

Point	Image	Vx	Vy
204	1	0.019	-0.448
204	2	2.011	-0.111

Point	Image	Vx	Vy
205	1	0.014	-0.338
205	2	1.957	-0.216

Point	Image	Vx	Vy
206	1	-0.005	0.038
206	2	0.861	0.630

Point	Image	Vx	Vy
207	1	-0.005	0.086
207	2	1.305	-0.069

Point	Image	Vx	Vy
208	1	0.055	-1.571
208	2	1.948	1.589

Point	Image	Vx	Vy
209	1	0.157	-4.485
209	2	1.741	4.605

Point	Image	Vx	Vy
210	1	-0.022	0.510
210	2	0.731	0.945

Point	Image	Vx	Vy
211	1	-0.027	0.690
211	2	1.728	0.246

Point	Image	Vx	Vy
212	1	0.003	-0.170
212	2	2.088	-0.920

Point	Image	Vx	Vy
213	1	-0.054	1.670
213	2	1.910	0.433

Point	Image	Vx	Vy
214	1	-0.033	1.013
214	2	1.994	-2.345

Point	Image	Vx	Vy
215	1	0.154	-4.424
215	2	1.598	4.641

Point	Image	Vx	Vy
216	1	-0.006	0.157
216	2	-0.328	-2.105

Point	Image	Vx	Vy
217	1	0.001	-0.033
217	2	-1.073	-1.909

Point	Image	Vx	Vy
218	1	-0.031	0.794
218	2	0.222	2.595

Point	Image	Vx	Vy
219	1	-0.055	1.712
219	2	1.996	0.015

Point	Image	Vx	Vy
220	1	-0.036	1.081
220	2	-0.246	-4.044

Point	Image	Vx	Vy
221	1	-0.050	1.158
221	2	-2.778	4.551

Point	Image	Vx	Vy
222	1	-0.032	0.819
222	2	0.636	1.500

Point	Image	Vx	Vy
223	1	-0.001	0.112
223	2	-0.407	1.450

Point	Image	Vx	Vy
224	1	0.115	-3.239
224	2	2.074	3.128

Point	Image	Vx	Vy
225	1	-0.001	0.019
225	2	-0.138	-1.589

Point	Image	Vx	Vy
226	1	-0.019	0.473
226	2	1.790	0.340

Point	Image	Vx	Vy
227	1	-0.017	0.454
227	2	1.913	-1.881

Point	Image	Vx	Vy
228	1	-0.056	1.829
228	2	2.362	-0.445

Point	Image	Vx	Vy
229	1	0.045	-0.918
229	2	2.443	2.070

Point	Image	Vx	Vy
230	1	-0.023	0.603
230	2	-2.640	1.457

Point	Image	Vx	Vy
231	1	-0.030	0.752
231	2	-2.199	3.609

Point	Image	Vx	Vy
232	1	-0.019	0.498
232	2	0.127	-2.446

Point	Image	Vx	Vy
233	1	0.010	-0.188
233	2	-0.001	0.718

Point	Image	Vx	Vy
234	1	0.007	-0.227
234	2	1.725	0.130

Point	Image	Vx	Vy
235	1	-0.002	0.007
235	2	1.112	0.164

Point	Image	Vx	Vy
236	1	0.128	-3.650
236	2	1.861	3.727

Point	Image	Vx	Vy
237	1	-0.002	0.053
237	2	-0.779	-1.825

Point	Image	Vx	Vy
238	1	-0.007	0.182
238	2	-0.015	-1.888

Point	Image	Vx	Vy
239	1	-0.004	0.092
239	2	-0.782	-1.921

Point	Image	Vx	Vy
240	1	-0.054	1.836
240	2	-1.487	-6.171

Point	Image	Vx	Vy
241	1	0.009	-0.207
241	2	1.032	-0.594

Point	Image	Vx	Vy
242	1	-0.001	0.038
242	2	-1.457	-1.090

Point	Image	Vx	Vy
243	1	-0.037	1.009
243	2	-0.918	-2.876

Point	Image	Vx	Vy
244	1	-0.020	0.440
244	2	-4.200	4.521

Point	Image	Vx	Vy
245	1	-0.051	1.180
245	2	0.812	2.334

Point	Image	Vx	Vy
246	1	0.021	-0.400
246	2	2.404	-0.246

Point	Image	Vx	Vy
247	1	0.002	0.027
247	2	-0.679	1.976

Point	Image	Vx	Vy
248	1	0.003	-0.126
248	2	0.387	0.655

Point	Image	Vx	Vy
249	1	-0.069	1.867
249	2	-0.044	-3.282

Point	Image	Vx	Vy
250	1	0.066	-2.400
250	2	0.908	4.394

Point	Image	Vx	Vy
251	1	-0.023	0.673
251	2	2.131	0.187

Point	Image	Vx	Vy
252	1	-0.023	0.681
252	2	0.014	-3.244

Point	Image	Vx	Vy
253	1	-0.014	0.315
253	2	-5.484	5.704

Point	Image	Vx	Vy
254	1	-0.055	1.816
254	2	-1.166	-5.786

Point	Image	Vx	Vy
255	1	-0.015	0.416
255	2	-1.535	3.214

Point	Image	Vx	Vy
256	1	0.024	-0.641
256	2	2.378	0.049

Point	Image	Vx	Vy
257	1	0.018	-0.571
257	2	2.004	0.986

Point	Image	Vx	Vy
258	1	-0.038	1.205
258	2	-5.112	5.893

Point	Image	Vx	Vy
259	1	0.002	-0.033
259	2	-0.001	0.032

Point	Image	Vx	Vy
260	1	0.361	-8.893
260	2	-0.338	8.894

Point	Image	Vx	Vy
261	1	0.128	-3.521
261	2	-0.152	3.511

Point	Image	Vx	Vy
262	1	-0.129	3.535
262	2	0.152	-3.547

Point	Image	Vx	Vy
263	1	0.320	-8.635
263	2	-0.368	8.703

Point	Image	Vx	Vy
264	1	-0.011	0.319
264	2	0.014	-0.319

Point	Image	Vx	Vy
265	1	-0.031	0.656
265	2	0.021	-0.645

Point	Image	Vx	Vy
266	1	-0.012	0.338
266	2	0.015	-0.337

Point	Image	Vx	Vy
267	1	0.026	-0.653
267	2	-0.027	0.655

Point	Image	Vx	Vy
268	1	0.000	-0.016
268	2	-0.001	0.015

Point	Image	Vx	Vy
269	1	-0.013	0.264
269	2	0.009	-0.262

Point	Image	Vx	Vy
270	1	-0.275	6.729
270	2	0.260	-6.701

Point	Image	Vx	Vy
271	1	0.118	-2.709
271	2	-0.097	2.708

Total mean error of 542 image points: ax=-0.000, ay=-0.000

Total RMSE of 542 image points: mx=2.415, my=2.753

The image residuals of the control points

The image ID = 1			
Point ID	Vx	Vy	
1	-13.964	-4.934	
2	-15.229	-5.096	
3	-4.875	-3.415	
4	0.943	-1.997	
5	-0.137	-1.369	
6	-0.628	-1.972	
7	3.784	-1.173	
8	-1.095	-2.249	
9	-1.478	5.094	
10	-3.934	-2.465	
11	-1.186	-4.500	
12	0.840	-5.944	
13	1.606	-2.922	
14	1.105	-3.689	
15	5.364	-1.284	
16	0.704	-12.773	
17	0.463	-0.447	
18	-1.920	4.085	
19	1.276	7.694	
20	3.135	7.605	
21	12.199	6.735	
22	-0.096	6.241	
23	9.524	4.871	
24	-0.342	2.436	
25	-0.801	2.537	
26	2.053	-0.154	
27	-5.107	-7.052	
28	0.042	-2.125	

29	-2.760	-0.640	89	-0.000	0.067
30	-9.642	-1.047	90	-0.004	0.132
31	7.529	9.239	91	0.004	-0.053
32	3.364	2.260	92	-0.011	0.329
33	-2.149	1.778	93	0.008	-0.100
34	9.784	0.910	94	0.026	-0.551
35	10.802	0.942	95	0.035	-0.770
36	1.099	2.648	96	0.037	-0.831
37	2.717	-0.653	97	0.004	-0.008
38	10.881	7.521	98	0.005	-0.031
39	-3.206	-2.252	99	0.007	-0.103
40	-2.836	-8.738	100	0.033	-0.791
41	-3.892	-0.894	101	-0.000	0.039
42	5.338	-6.726	102	0.004	-0.063
43	0.360	-0.893	103	0.036	-0.814
44	2.458	2.669	104	0.018	-0.426
45	2.218	2.868	105	0.015	-0.296
46	-2.713	9.102	106	0.016	-0.357
47	-0.555	-1.102	107	0.008	-0.124
48	0.940	-1.866	108	0.022	-0.504
49	-2.168	0.872	109	0.024	-0.531
50	-0.554	-1.572	110	0.013	-0.426
51	2.320	-0.878	111	-0.003	0.025
52	-1.106	2.178	112	0.012	-0.298
53	-14.426	-2.856	113	0.011	-0.266
54	9.007	-0.472	114	0.012	-0.270
55	-15.690	-19.894	115	0.017	-0.405
56	1.709	-5.485	116	0.013	-0.292
57	-0.033	0.838	117	0.012	-0.290
58	-0.027	0.713	118	0.015	-0.350
59	-0.013	0.411	119	0.009	-0.221
60	-0.062	1.453	120	0.000	-0.090
61	-0.051	1.222	121	-0.001	-0.049
62	-0.045	1.101	122	0.002	-0.089
63	-0.049	1.184	123	0.003	-0.128
64	-0.049	1.182	124	0.007	-0.199
65	-0.040	0.981	125	0.023	-0.631
66	-0.034	0.868	126	-0.006	0.157
67	-0.027	0.706	127	0.009	-0.270
68	-0.041	1.007	128	0.006	-0.181
69	-0.010	0.327	129	0.002	-0.098
70	-0.034	0.872	130	0.001	-0.193
71	0.004	0.016	131	-0.018	0.406
72	-0.026	0.700	132	-0.022	0.525
73	-0.028	0.752	133	-0.019	0.443
74	-0.019	0.534	134	-0.031	0.780
75	-0.021	0.565	135	0.007	-0.295
76	-0.019	0.531	136	0.001	-0.128
77	-0.001	0.124	137	0.002	-0.154
78	0.024	-0.415	138	0.001	-0.130
79	-0.028	0.726	139	-0.026	0.665
80	-0.020	0.557	140	-0.004	0.083
81	-0.028	0.743	141	-0.006	0.145
82	-0.022	0.613	142	-0.006	0.132
83	-0.013	0.406	143	-0.012	0.304
84	-0.021	0.570	144	-0.008	0.190
85	-0.016	0.461	145	-0.010	0.024
86	-0.000	0.098	146	-0.035	0.867
87	-0.004	0.145	147	-0.026	0.646
88	-0.006	0.199	148	-0.028	0.712

149	-0.033	0.867	209	0.157	-4.485
150	-0.025	0.653	210	-0.022	0.510
151	-0.030	0.793	211	-0.027	0.690
152	-0.028	0.724	212	0.003	-0.170
153	-0.031	0.836	213	-0.054	1.670
154	-0.031	0.896	214	-0.033	1.013
155	-0.034	1.008	215	0.154	-4.424
156	-0.036	1.056	216	-0.006	0.157
157	-0.022	0.414	217	0.001	-0.033
158	-0.043	1.165	218	-0.031	0.794
159	-0.053	1.594	219	-0.055	1.712
160	-0.061	1.932	220	-0.036	1.081
161	-0.045	1.387	221	-0.050	1.158
162	-0.053	1.694	222	-0.032	0.819
163	-0.051	1.632	223	-0.001	0.112
164	-0.054	1.777	224	0.115	-3.239
165	-0.051	1.237	225	-0.001	0.019
166	-0.029	0.772	226	-0.019	0.473
167	0.002	-0.051	227	-0.017	0.454
168	0.003	-0.089	228	-0.056	1.829
169	-0.045	1.078	229	0.045	-0.918
170	-0.037	0.922	230	-0.023	0.603
171	-0.037	0.915	231	-0.030	0.752
172	-0.010	0.319	232	-0.019	0.498
173	0.002	0.007	233	0.010	-0.188
174	0.011	-0.214	234	0.007	-0.227
175	0.011	-0.270	235	-0.002	0.007
176	0.033	-0.825	236	0.128	-3.650
177	0.037	-0.920	237	-0.002	0.053
178	0.030	-0.683	238	-0.007	0.182
179	0.017	-0.355	239	-0.004	0.092
180	0.010	-0.171	240	-0.054	1.836
181	0.012	-0.304	241	0.009	-0.207
182	0.019	-0.454	242	-0.001	0.038
183	0.014	-0.363	243	-0.037	1.009
184	0.012	-0.473	244	-0.020	0.440
185	-0.026	0.670	245	-0.051	1.180
186	-0.003	0.066	246	0.021	-0.400
187	-0.015	0.400	247	0.002	0.027
188	-0.019	0.526	248	0.003	-0.126
189	-0.031	0.918	249	-0.069	1.867
190	-0.050	1.485	250	0.066	-2.400
191	-0.055	1.653	251	-0.023	0.673
192	-0.000	0.056	252	-0.023	0.681
193	0.056	-1.724	253	-0.014	0.315
194	-0.014	0.306	254	-0.055	1.816
195	0.021	-0.490	255	-0.015	0.416
196	-0.020	0.452	256	0.024	-0.641
197	-0.018	0.475	257	0.018	-0.571
198	-0.022	0.573	258	-0.038	1.205
199	-0.034	0.840	259	0.002	-0.033
200	-0.041	1.003	260	0.361	-8.893
201	-0.017	0.486	261	0.128	-3.521
202	-0.020	0.547	262	-0.129	3.535
203	0.010	-0.218	263	0.320	-8.635
204	0.019	-0.448	264	-0.011	0.319
205	0.014	-0.338	265	-0.031	0.656
206	-0.005	0.038	266	-0.012	0.338
207	-0.005	0.086	267	0.026	-0.653
208	0.055	-1.571	268	0.000	-0.016

269 -0.013 0.264
 270 -0.275 6.729
 RMSE of 271 points: mx=2.683, my=2.653

271 0.118 -2.709

The image ID = 2

Point ID	Vx	Vy
1	-3.959	3.272
2	-5.701	4.128
3	-1.972	-1.154
4	-1.520	-1.897
5	-1.643	0.298
6	-3.489	-0.121
7	-1.248	1.543
8	-1.971	0.172
9	-2.737	7.546
10	-2.791	-2.088
11	-3.069	0.619
12	-2.224	-0.420
13	-3.964	1.788
14	-4.412	0.500
15	-1.667	1.752
16	1.538	2.999
17	-1.303	-1.091
18	-3.502	1.629
19	-2.169	-0.165
20	-4.013	1.861
21	4.129	3.561
22	-1.439	2.777
23	7.022	1.018
24	-1.221	-0.949
25	-2.462	0.532
26	-0.734	-0.369
27	-8.341	-6.686
28	-1.436	-2.461
29	-1.930	-0.294
30	-5.958	-0.084
31	2.519	3.749
32	0.524	1.253
33	-5.600	-2.830
34	3.022	5.165
35	6.782	1.027
36	-0.462	5.194
37	1.427	0.547
38	1.556	2.323
39	-0.036	-1.470
40	-2.938	-7.685
41	-0.941	-0.097
42	4.536	-6.677
43	1.065	-0.063
44	1.685	-0.443
45	2.975	-0.667
46	-2.574	7.485
47	-1.747	-1.590
48	-1.762	-1.356
49	-4.127	1.337
50	-0.831	-4.530
51	-2.356	1.491
52	-1.894	3.201
53	-3.989	-4.542
54	2.590	-3.106

55	-2.575	18.627
56	4.379	-5.694
57	-1.512	-4.132
58	-1.050	-3.765
59	-2.136	-3.667
60	0.448	-3.795
61	0.953	-3.179
62	0.791	-3.104
63	1.679	-2.633
64	1.252	2.389
65	0.360	2.633
66	0.475	2.561
67	-2.229	4.007
68	-1.515	3.178
69	-0.874	-2.758
70	0.589	-2.762
71	0.900	-1.587
72	1.922	-1.828
73	1.668	-2.050
74	1.733	-1.722
75	1.373	-1.866
76	1.223	-1.849
77	1.813	-1.144
78	2.404	-0.228
79	0.667	2.109
80	0.586	1.942
81	0.082	2.530
82	0.194	2.367
83	0.357	2.048
84	-1.206	3.309
85	-5.522	4.707
86	-4.760	3.476
87	-0.596	-1.900
88	0.416	-1.588
89	-0.266	-1.607
90	-0.344	-1.602
91	0.724	-0.962
92	1.340	-1.493
93	2.072	-0.700
94	2.247	-0.072
95	2.326	0.214
96	2.310	0.283
97	0.528	1.108
98	-0.510	1.602
99	-0.264	1.061
100	-0.764	-0.447
101	0.822	-0.950
102	1.318	-0.733
103	2.279	0.272
104	2.132	-0.087
105	0.156	0.915
106	0.165	0.375
107	-0.090	0.628
108	-3.563	0.618

109	-4.075	1.357	169	-0.270	-3.686
110	-0.190	0.625	170	1.340	-2.473
111	0.927	0.038	171	0.323	2.607
112	2.102	-0.113	172	2.343	-1.051
113	2.279	-0.128	173	1.928	-0.813
114	0.252	-0.007	174	1.680	-0.578
115	0.239	0.075	175	1.502	-0.238
116	0.095	-0.073	176	2.224	0.369
117	-2.629	-0.291	177	2.279	0.473
118	-2.904	-0.293	178	2.450	0.600
119	-2.610	-0.676	179	0.108	0.586
120	0.224	0.484	180	-0.324	0.739
121	0.617	0.526	181	0.054	-0.510
122	1.393	0.086	182	-3.213	-0.381
123	2.240	0.072	183	-1.386	-0.953
124	0.169	-1.016	184	1.298	1.224
125	-0.116	-0.669	185	2.067	-0.037
126	0.211	-1.498	186	-0.145	-1.912
127	0.044	-1.113	187	-0.138	-2.704
128	-1.327	-1.693	188	0.119	-2.914
129	-1.195	-1.941	189	0.151	-3.537
130	-1.826	1.972	190	1.677	0.511
131	0.805	0.405	191	1.913	0.185
132	0.787	0.565	192	1.147	-1.098
133	0.943	0.579	193	1.496	2.285
134	0.606	0.895	194	2.264	0.036
135	2.144	0.465	195	0.301	0.439
136	2.139	0.342	196	0.971	0.679
137	2.079	0.508	197	-0.013	-2.857
138	2.028	0.534	198	-2.163	-3.723
139	2.057	-0.017	199	0.822	-2.602
140	-0.138	-2.000	200	1.434	-2.509
141	-0.549	-2.193	201	0.242	2.280
142	-0.334	-2.282	202	0.425	2.071
143	0.047	-2.369	203	1.925	-0.428
144	-0.430	-2.209	204	2.011	-0.111
145	-5.293	4.605	205	1.957	-0.216
146	-1.473	1.831	206	0.861	0.630
147	0.898	1.035	207	1.305	-0.069
148	1.733	0.338	208	1.948	1.589
149	1.690	0.400	209	1.741	4.605
150	2.076	0.027	210	0.731	0.945
151	2.151	-0.193	211	1.728	0.246
152	2.061	0.085	212	2.088	-0.920
153	2.140	0.056	213	1.910	0.433
154	-0.162	-3.707	214	1.994	-2.345
155	0.061	-3.754	215	1.598	4.641
156	-0.063	-3.877	216	-0.328	-2.105
157	-4.198	4.542	217	-1.073	-1.909
158	-3.779	5.214	218	0.222	2.595
159	1.574	0.520	219	1.996	0.015
160	2.156	-0.220	220	-0.246	-4.044
161	0.043	-4.354	221	-2.778	4.551
162	-0.548	-5.217	222	0.636	1.500
163	-0.832	-5.354	223	-0.407	1.450
164	-1.299	-5.895	224	2.074	3.128
165	0.123	-3.691	225	-0.138	-1.589
166	1.600	-2.176	226	1.790	0.340
167	0.276	-0.857	227	1.913	-1.881
168	-0.223	-1.527	228	2.362	-0.445

229	2.443	2.070
230	-2.640	1.457
231	-2.199	3.609
232	0.127	-2.446
233	-0.001	0.718
234	1.725	0.130
235	1.112	0.164
236	1.861	3.727
237	-0.779	-1.825
238	-0.015	-1.888
239	-0.782	-1.921
240	-1.487	-6.171
241	1.032	-0.594
242	-1.457	-1.090
243	-0.918	-2.876
244	-4.200	4.521
245	0.812	2.334
246	2.404	-0.246
247	-0.679	1.976
248	0.387	0.655
249	-0.044	-3.282
250	0.908	4.394

251	2.131	0.187
252	0.014	-3.244
253	-5.484	5.704
254	-1.166	-5.786
255	-1.535	3.214
256	2.378	0.049
257	2.004	0.986
258	-5.112	5.893
259	-0.001	0.032
260	-0.338	8.894
261	-0.152	3.511
262	0.152	-3.547
263	-0.368	8.703
264	0.014	-0.319
265	0.021	-0.645
266	0.015	-0.337
267	-0.027	0.655
268	-0.001	0.015
269	0.009	-0.262
270	0.260	-6.701
271	-0.097	2.708

RMSE of 271 points: mx=2.113, my=2.850

Total number of all control image points = 542

Total rmsex = 2.415, rmsey = 2.753