

Table S1. The observed and the obs.-calc. frequencies (MHz) of measured rotational transitions in the ground state of toluene used for determination of spectroscopic constants.

Toluene ground state, combined FTMW+MMW data set

Obs-calc differences are from fit of Watson's reduced Hamiltonian in
 ---> reduction-A, representation-I.r <---

TRANSITION	Observed	Obs-Calc	Error	Note	wt for blend
! Errors also specify the spectrometer:					
! 0.002,0.004 = IFPAN FTMW					
! 0.005,0.01 = KIEL waveguide FT					
! 0.05 = IFPAN MMW					
!-----					
! Low-J aR0,1					
1, 0, 1 <- 0, 0, 0	4266.340	0.005	0.004		
2, 1, 2 <- 1, 1, 1	7764.041	-0.004	0.002		
2, 0, 2 <- 1, 0, 1	8410.499	0.000	0.002		
2, 1, 1 <- 1, 1, 0	9301.280	-0.003	0.002		
3, 1, 3 <- 2, 1, 2	11574.937	0.000	0.002		
3, 0, 3 <- 2, 0, 2	12329.475	0.000	0.002		
3, 2, 2 <- 2, 2, 1	12798.978	-0.003	0.005		
3, 2, 1 <- 2, 2, 0	13268.495	-0.003	0.002		
3, 1, 2 <- 2, 1, 1	13868.467	0.000	0.002		
4, 1, 4 <- 3, 1, 3	15316.356	0.000	0.002		
4, 0, 4 <- 3, 0, 3	15993.274	0.000	0.002		
4, 2, 3 <- 3, 2, 2	16969.684	0.000	0.002		
4, 3, 2 <- 3, 3, 1	17276.994	-0.004	0.005		
4, 3, 1 <- 3, 3, 0	17349.666	-0.003	0.005		
4, 2, 2 <- 3, 2, 1	18040.691	0.002	0.002		
4, 1, 3 <- 3, 1, 2	18318.144	0.000	0.002		
5, 1, 5 <- 4, 1, 4	18987.413	0.001	0.005		
5, 0, 5 <- 4, 0, 4	19478.928	0.002	0.005		
5, 2, 4 <- 4, 2, 3	21060.721	0.000	0.005		
5, 4, 2 <- 4, 4, 1	21602.426	0.001	0.005		
5, 4, 1 <- 4, 4, 0	21610.562	0.000	0.005		
5, 3, 3 <- 4, 3, 2	21638.436	0.000	0.005		
5, 3, 2 <- 4, 3, 1	21883.422	0.003	0.005		
5, 1, 4 <- 4, 1, 3	22585.415	0.002	0.005		
5, 2, 3 <- 4, 2, 2	22905.270	0.002	0.005		
6, 1, 6 <- 5, 1, 5	22597.904	0.001	0.005		
6, 0, 6 <- 5, 0, 5	22902.277	0.001	0.005		
6, 2, 5 <- 5, 2, 4	25057.663	0.001	0.005		
6, 3, 4 <- 5, 3, 3	25983.342	0.001	0.005		
6, 5, 2 <- 5, 5, 1	25906.470	0.000	0.005		
6, 5, 1 <- 5, 5, 0	25907.240	0.001	0.005		
6, 4, 3 <- 5, 4, 2	26002.141	0.000	0.005		
6, 4, 2 <- 5, 4, 1	26038.031	0.001	0.005		
6, 3, 3 <- 5, 3, 2	26591.347	0.002	0.005		
6, 1, 5 <- 5, 1, 4	26600.784	0.002	0.005		
7, 1, 7 <- 6, 1, 6	26163.041	0.000	0.005		
7, 0, 7 <- 6, 0, 6	26332.205	0.002	0.005		

!!
!!
!!

aR-2,3

10, 2, 8 <- 9, 4, 5	10435.167	0.002	0.010
11, 2, 9 <- 10, 4, 6	13741.238	-0.002	0.010
12, 2, 10 <- 11, 4, 7	15229.103	0.016	0.010
13, 2, 11 <- 12, 4, 8	14806.750	0.006	0.010
14, 2, 12 <- 13, 4, 9	12630.653	-0.003	0.010
13, 3, 10 <- 12, 5, 7	15321.958	0.003	0.010
15, 3, 12 <- 14, 5, 9	22157.717	-0.006	0.010
16, 3, 13 <- 15, 5, 10	22509.001	0.003	0.010
17, 3, 14 <- 16, 5, 11	20825.779	0.000	0.010
15, 4, 11 <- 14, 6, 8	12999.406	0.005	0.010
23, 4, 19 <- 22, 6, 16	15802.442	-0.013	0.010
18, 5, 13 <- 17, 7, 10	16125.906	-0.012	0.010
26, 8, 18 <- 25, 10, 15	12503.879	-0.023	0.010
27, 8, 19 <- 26, 10, 16	23081.761	-0.005	0.010
30, 8, 23 <- 29, 10, 20	10794.571	0.007	0.010
31, 8, 24 <- 30, 10, 21	11878.443	-0.003	0.010
33, 8, 26 <- 32, 10, 23	11064.248	-0.008	0.010
39, 8, 31 <- 38, 10, 28	24222.980	0.004	0.010
29, 9, 20 <- 28, 11, 17	13650.885	-0.002	0.010
30, 9, 21 <- 29, 11, 18	24660.751	0.006	0.010
35, 9, 27 <- 34, 11, 24	16924.061	-0.008	0.010
39, 11, 29 <- 38, 13, 26	22473.146	0.017	0.010

!!
!!
!!

Q-type transitions

3, 1, 2 <- 3, 1, 3	4599.387	0.000	0.002
3, 2, 2 <- 3, 0, 3	14976.886	-0.004	0.005
4, 1, 3 <- 4, 1, 4	7601.176	0.001	0.002
4, 2, 3 <- 4, 0, 4	15953.300	0.000	0.005
5, 1, 4 <- 5, 1, 5	11199.173	-0.002	0.004
5, 2, 4 <- 5, 0, 5	17535.089	-0.006	0.005
5, 2, 3 <- 5, 2, 4	3507.235	0.000	0.002
6, 1, 5 <- 6, 1, 6	15202.055	-0.001	0.005
6, 2, 5 <- 6, 0, 6	19690.480	0.000	0.005
6, 3, 4 <- 6, 1, 5	24013.520	-0.009	0.010
7, 2, 5 <- 7, 2, 6	9583.248	-0.001	0.005
7, 3, 5 <- 7, 1, 6	23966.287	-0.005	0.010
8, 1, 7 <- 8, 1, 8	23486.281	0.000	0.010
8, 2, 6 <- 8, 2, 7	13626.763	-0.005	0.005
8, 2, 7 <- 8, 0, 8	25272.788	0.001	0.010
8, 3, 6 <- 8, 1, 7	24654.284	0.000	0.010
9, 3, 7 <- 9, 1, 8	26102.528	-0.003	0.010
10, 3, 7 <- 10, 3, 8	10802.240	0.005	0.005
10, 2, 8 <- 10, 2, 9	22758.922	-0.003	0.005
12, 3, 9 <- 12, 3, 10	20180.323	0.004	0.005
13, 4, 9 <- 13, 4, 10	11441.302	0.001	0.005
14, 4, 10 <- 14, 4, 11	16206.667	-0.001	0.005
14, 3, 11 <- 13, 5, 8	19692.990	0.004	0.005
15, 4, 11 <- 15, 4, 12	21561.683	0.001	0.005
16, 5, 11 <- 16, 5, 12	11624.683	0.000	0.005
17, 5, 12 <- 17, 5, 13	16625.158	0.001	0.005
19, 6, 13 <- 19, 6, 14	11452.151	-0.002	0.005
20, 6, 14 <- 20, 6, 15	16590.604	0.000	0.005
21, 6, 15 <- 21, 6, 16	22573.474	0.001	0.005
22, 7, 15 <- 22, 7, 16	11009.854	-0.001	0.005
23, 7, 16 <- 23, 7, 17	16186.023	-0.002	0.005
25, 8, 17 <- 25, 8, 18	10373.594	0.000	0.005
26, 8, 18 <- 26, 8, 19	15489.586	-0.001	0.005
28, 9, 19 <- 28, 9, 20	9609.359	0.005	0.005
31, 10, 21 <- 31, 10, 22	8772.942	-0.003	0.005
32, 10, 22 <- 32, 10, 23	13510.861	0.000	0.005

29, 9, 20 <- 29, 9, 21	14575.069	0.000	0.005
30, 9, 21 <- 30, 9, 22	20800.957	-0.001	0.005
33, 10, 23 <- 33, 10, 24	19615.608	0.001	0.005
35, 11, 24 <- 35, 11, 25	12358.352	-0.003	0.005
36, 11, 25 <- 36, 11, 26	18249.342	0.000	0.005
37, 11, 26 <- 37, 11, 27	25492.785	0.001	0.005
38, 12, 26 <- 38, 12, 27	11170.419	-0.001	0.005
39, 12, 27 <- 39, 12, 28	16767.763	0.001	0.005
40, 12, 28 <- 40, 12, 29	23840.530	0.001	0.005
41, 13, 28 <- 41, 13, 29	9990.350	0.001	0.005
42, 13, 29 <- 42, 13, 30	15230.647	0.000	0.005
43, 13, 30 <- 43, 13, 31	22035.711	0.001	0.005
44, 14, 30 <- 44, 14, 31	8851.542	0.005	0.005
45, 14, 31 <- 45, 14, 32	13689.947	0.004	0.005
46, 14, 32 <- 46, 14, 33	20143.387	-0.001	0.005
48, 15, 33 <- 48, 15, 34	12188.344	0.003	0.005
49, 15, 34 <- 49, 15, 35	18223.343	-0.008	0.005
!			
!			
! aR_0,1 type-II bandheads			
!			
47, 0, 47 <- 46, 0, 46	166122.569	0.033	0.050
46, 1, 45 <- 45, 1, 44	166124.584	-0.047	0.050
45, 2, 43 <- 44, 2, 42	166131.070	-0.023	0.050
44, 3, 41 <- 43, 3, 40	166147.054	-0.092	0.050
43, 4, 39 <- 42, 4, 38	166181.256	-0.056	0.050
42, 5, 37 <- 41, 5, 36	166247.978	-0.068	0.050
42, 6, 37 <- 41, 6, 36	166247.978	-0.059	0.050
!			
40, 7, 33 <- 39, 7, 32	166613.751	-0.005	0.050
40, 8, 33 <- 39, 8, 32	166604.033	-0.038	0.050
39, 8, 31 <- 38, 8, 30	167165.141	0.000	0.050
37, 9, 28 <- 36, 9, 27	166259.778	-0.060	0.050
39, 9, 31 <- 38, 9, 30	166989.488	-0.013	0.050
37, 12, 26 <- 36, 12, 25	166158.018	-0.089	0.050
37, 13, 24 <- 36, 13, 23	165920.468	0.027	0.050
!			
48, 0, 48 <- 47, 0, 47	169619.086	0.092	0.050
47, 1, 46 <- 46, 1, 45	169621.135	0.124	0.050
46, 2, 44 <- 45, 2, 43	169627.179	0.021	0.050
45, 3, 42 <- 44, 3, 41	169642.347	0.007	0.050
44, 4, 40 <- 43, 4, 39	169674.483	0.026	0.050
43, 5, 38 <- 42, 5, 37	169736.766	0.052	0.050
43, 6, 38 <- 42, 6, 37	169736.766	0.056	0.050
!			
41, 8, 34 <- 40, 8, 33	170063.855	-0.038	0.050
41, 7, 34 <- 40, 7, 33	170068.948	0.000	0.050
40, 9, 32 <- 39, 9, 31	170430.130	-0.003	0.050
40, 8, 32 <- 39, 8, 31	170529.144	-0.024	0.050
39, 10, 30 <- 38, 10, 29	170791.262	-0.001	0.050
38, 11, 28 <- 37, 11, 27	169902.977	-0.041	0.050
38, 12, 27 <- 37, 12, 26	170793.088	-0.004	0.050
38, 13, 26 <- 37, 13, 25	170217.424	0.006	0.050
38, 13, 25 <- 37, 13, 24	171172.282	0.001	0.050
!			
49, 0, 49 <- 48, 0, 48	173115.460	0.060	0.050
48, 1, 47 <- 47, 1, 46	173117.272	-0.072	0.050
47, 2, 45 <- 46, 2, 44	173123.213	0.014	0.050
46, 3, 43 <- 45, 3, 42	173137.569	-0.007	0.050
45, 4, 41 <- 44, 4, 40	173167.810	-0.011	0.050
44, 5, 39 <- 43, 5, 38	173226.018	-0.019	0.050
44, 6, 39 <- 43, 6, 38	173226.018	-0.016	0.050
43, 6, 37 <- 42, 6, 36	173333.196	-0.035	0.050
43, 7, 37 <- 42, 7, 36	173333.196	0.051	0.050
!			
42, 7, 35 <- 41, 7, 34	173529.889	-0.002	0.050
42, 8, 35 <- 41, 8, 34	173527.253	-0.028	0.050
41, 9, 33 <- 40, 9, 32	173869.106	-0.001	0.050
37, 11, 26 <- 36, 11, 25	173013.614	0.016	0.050
39, 11, 29 <- 38, 11, 28	173878.731	-0.003	0.050
!			

39, 10, 29	<-	38, 10, 28	178439.577	-0.018	0.050
!					
59, 0, 59	<-	58, 0, 58	208076.278	-0.075	0.050
58, 1, 57	<-	57, 1, 56	208077.803	0.033	0.050
57, 2, 55	<-	56, 2, 54	208081.562	0.004	0.050
56, 3, 53	<-	55, 3, 52	208090.445	0.017	0.050
55, 4, 51	<-	54, 4, 50	208108.324	-0.004	0.050
54, 5, 49	<-	53, 5, 48	208141.128	0.016	0.050
53, 6, 47	<-	52, 6, 46	208197.658	-0.025	0.050
51, 8, 43	<-	50, 8, 42	208447.478	-0.075	0.050
51, 9, 43	<-	50, 9, 42	208447.478	0.003	0.050
50, 9, 41	<-	49, 9, 40	208706.450	-0.063	0.050
50, 10, 41	<-	49, 10, 40	208704.375	-0.066	0.050
!					
59, 1, 58	<-	58, 1, 57	211573.503	0.010	0.050
58, 2, 56	<-	57, 2, 55	211577.129	-0.006	0.050
57, 3, 54	<-	56, 3, 53	211585.606	-0.022	0.050
56, 4, 52	<-	55, 4, 51	211602.685	-0.029	0.050
54, 6, 48	<-	53, 6, 47	211687.481	-0.003	0.050
53, 7, 46	<-	52, 7, 45	211776.367	-0.015	0.050
52, 8, 44	<-	51, 8, 43	211921.679	-0.011	0.050
52, 9, 44	<-	51, 9, 43	211921.679	0.028	0.050
51, 9, 42	<-	50, 9, 41	212160.670	-0.023	0.050
51, 10, 42	<-	50, 10, 41	212159.589	-0.028	0.050
50, 10, 40	<-	49, 10, 39	212574.405	0.018	0.050
50, 11, 40	<-	49, 11, 39	212552.406	0.047	0.050
49, 12, 38	<-	48, 12, 37	213141.673	0.000	0.050
!					
60, 1, 59	<-	59, 1, 58	215069.174	0.022	0.050
59, 2, 57	<-	58, 2, 56	215072.677	0.021	0.050
58, 3, 55	<-	57, 3, 54	215080.777	-0.016	0.050
57, 4, 53	<-	56, 4, 52	215097.094	-0.024	0.050
56, 5, 51	<-	55, 5, 50	215126.801	-0.016	0.050
55, 6, 49	<-	54, 6, 48	215177.637	0.001	0.050
54, 7, 47	<-	53, 7, 46	215261.515	0.011	0.050
53, 8, 45	<-	52, 8, 44	215397.611	-0.009	0.050
!					
63, 1, 62	<-	62, 1, 61	225555.765	0.027	0.050
62, 2, 60	<-	61, 2, 59	225558.888	0.020	0.050
61, 3, 58	<-	60, 3, 57	225566.045	-0.009	0.050
60, 4, 56	<-	59, 4, 55	225580.349	-0.008	0.050
59, 5, 54	<-	58, 5, 53	225606.158	0.004	0.050
58, 6, 52	<-	57, 6, 51	225649.866	0.046	0.050
57, 7, 50	<-	56, 7, 49	225720.875	-0.014	0.050
56, 8, 48	<-	55, 8, 47	225834.124	-0.009	0.050
55, 9, 46	<-	54, 9, 45	226013.588	-0.032	0.050
55, 10, 46	<-	54, 10, 45	226013.588	0.040	0.050
54, 10, 44	<-	53, 10, 43	226302.244	0.068	0.050
54, 11, 44	<-	53, 11, 43	226300.438	0.065	0.050
53, 11, 42	<-	52, 11, 41	226796.472	-0.007	0.050
53, 12, 42	<-	52, 12, 41	226762.737	0.014	0.050
52, 12, 40	<-	51, 12, 39	227870.622	-0.011	0.050
!					
64, 1, 63	<-	63, 1, 62	229051.148	0.016	0.050
63, 2, 61	<-	62, 2, 60	229054.152	0.002	0.050
62, 3, 59	<-	61, 3, 58	229061.080	0.028	0.050
61, 4, 57	<-	60, 4, 56	229074.778	0.020	0.050
60, 5, 55	<-	59, 5, 54	229099.383	-0.032	0.050
59, 6, 53	<-	58, 6, 52	229140.997	-0.021	0.050
58, 7, 51	<-	57, 7, 50	229208.439	-0.016	0.050
57, 8, 49	<-	56, 8, 48	229315.369	0.027	0.050
56, 9, 47	<-	55, 9, 46	229483.525	-0.010	0.050
56, 10, 47	<-	55, 10, 46	229483.525	0.026	0.050
55, 10, 45	<-	54, 10, 44	229750.888	0.023	0.050
55, 11, 45	<-	54, 11, 44	229749.991	0.068	0.050
54, 11, 43	<-	53, 11, 42	230196.251	-0.012	0.050
54, 12, 43	<-	53, 12, 42	230177.645	0.002	0.050
53, 12, 41	<-	52, 12, 40	231087.451	0.013	0.050
!					
71, 2, 69	<-	70, 2, 68	257013.998	0.019	0.050

70,	3,	67	<-	69,	3,	66	257019.069	0.007	0.050
69,	4,	65	<-	68,	4,	64	257029.000	-0.008	0.050
68,	5,	63	<-	67,	5,	62	257046.608	-0.017	0.050
67,	6,	61	<-	66,	6,	60	257075.730	-0.048	0.050
66,	7,	59	<-	65,	7,	58	257121.854	-0.015	0.050
!									
80,	1,	79	<-	79,	1,	78	284967.220	-0.002	0.050
79,	2,	77	<-	78,	2,	76	284968.971	-0.026	0.050
76,	5,	71	<-	75,	5,	70	284993.235	0.000	0.050
!									
!	High K-1 interband lines or lines measured without the bandhead								
!									
51,	6,	45	<-	50,	6,	44	201219.300	-0.024	0.050
!									
47,	8,	39	<-	46,	8,	38	194575.131	-0.007	0.050
48,	8,	40	<-	47,	8,	39	198038.832	0.013	0.050
!									
46,	9,	37	<-	45,	9,	36	194955.282	0.022	0.050
47,	9,	39	<-	46,	9,	38	194573.937	0.008	0.050
48,	9,	40	<-	47,	9,	39	198038.132	-0.069	0.050
!									
45,	10,	35	<-	44,	10,	34	195833.827	-0.011	0.050
46,	10,	37	<-	45,	10,	36	194929.425	-0.007	0.050
!									
43,	11,	32	<-	42,	11,	31	196079.522	0.008	0.050
45,	11,	35	<-	44,	11,	34	195456.826	0.082	0.050
!									
44,	12,	33	<-	43,	12,	32	195603.535	-0.026	0.050
45,	12,	33	<-	44,	12,	32	208348.528	-0.035	0.050
!									
44,	13,	32	<-	43,	13,	31	197868.985	-0.009	0.050
45,	13,	33	<-	44,	13,	32	202001.756	0.007	0.050
47,	13,	34	<-	46,	13,	33	219940.735	-0.025	0.050
48,	13,	35	<-	47,	13,	34	223279.445	0.020	0.050
49,	13,	37	<-	48,	13,	36	217056.499	-0.066	0.050
50,	13,	38	<-	49,	13,	37	220559.873	-0.006	0.050
50,	13,	37	<-	49,	13,	36	228658.036	0.024	0.050
51,	13,	39	<-	50,	13,	38	224009.218	0.081	0.050
51,	13,	38	<-	50,	13,	37	231126.273	-0.007	0.050
52,	13,	39	<-	51,	13,	38	233684.839	-0.013	0.050
52,	13,	40	<-	51,	13,	39	227424.613	-0.093	0.050
53,	13,	41	<-	52,	13,	40	230822.231	0.097	0.050
54,	13,	42	<-	53,	13,	41	234212.355	0.001	0.050
!									
43,	14,	29	<-	42,	14,	28	195698.246	0.004	0.050
43,	14,	30	<-	42,	14,	29	193468.912	-0.013	0.050
44,	14,	31	<-	43,	14,	30	198231.421	-0.007	0.050
45,	14,	32	<-	44,	14,	31	202895.236	-0.001	0.050
47,	14,	34	<-	46,	14,	33	211813.470	0.041	0.050
48,	14,	35	<-	47,	14,	34	216029.630	0.000	0.050
48,	14,	34	<-	47,	14,	33	225368.471	-0.004	0.050
49,	14,	35	<-	48,	14,	34	230306.661	-0.010	0.050
50,	14,	36	<-	49,	14,	35	234569.751	-0.014	0.050
51,	14,	38	<-	50,	14,	37	227700.978	-0.008	0.050
52,	14,	39	<-	51,	14,	38	231321.557	-0.016	0.050
!									
38,	15,	23	<-	37,	15,	22	168260.073	-0.045	0.050
38,	15,	24	<-	37,	15,	23	168244.781	0.019	0.050
39,	15,	24	<-	38,	15,	23	173046.326	-0.039	0.050
39,	15,	25	<-	38,	15,	24	173014.867	-0.045	0.050
40,	15,	26	<-	39,	15,	25	177818.896	0.018	0.050
43,	15,	28	<-	42,	15,	27	192824.575	0.015	0.050
43,	15,	29	<-	42,	15,	28	192416.575	0.029	0.050
44,	15,	29	<-	43,	15,	28	198036.996	0.026	0.050
44,	15,	30	<-	43,	15,	29	197322.133	0.009	0.050
45,	15,	30	<-	44,	15,	29	203431.457	-0.004	0.050
45,	15,	31	<-	44,	15,	30	202223.947	0.008	0.050
47,	15,	32	<-	46,	15,	31	214940.180	-0.010	0.050
47,	15,	33	<-	46,	15,	32	211917.913	0.033	0.050
48,	15,	33	<-	47,	15,	32	221059.955	-0.011	0.050

48, 15, 34 <- 47, 15, 33	216649.531	-0.006	0.050	
49, 15, 34 <- 48, 15, 33	227297.225	-0.019	0.050	
49, 15, 35 <- 48, 15, 34	221262.204	-0.029	0.050	
50, 15, 35 <- 49, 15, 34	233440.339	0.091	0.050	
50, 15, 36 <- 49, 15, 35	225728.737	-0.122	0.050	
!				
38, 16, 22 <- 37, 16, 21	167507.678	0.006	0.050	
38, 16, 23 <- 37, 16, 22	167506.327	0.006	0.050	
39, 16, 23 <- 38, 16, 22	172202.907	0.024	0.050	
39, 16, 24 <- 38, 16, 23	172199.908	0.020	0.050	
40, 16, 24 <- 39, 16, 23	176928.804	0.006	0.050	
40, 16, 25 <- 39, 16, 24	176922.359	0.001	0.050	
41, 16, 25 <- 40, 16, 24	181689.120	0.008	0.050	
41, 16, 26 <- 40, 16, 25	181675.676	0.016	0.050	
42, 16, 26 <- 41, 16, 25	186488.865	0.020	0.050	
42, 16, 27 <- 41, 16, 26	186461.635	0.102	0.050	
44, 16, 28 <- 43, 16, 27	196238.161	0.031	0.050	
44, 16, 29 <- 43, 16, 28	196134.688	0.002	0.050	
45, 16, 29 <- 44, 16, 28	201213.145	0.019	0.050	
45, 16, 30 <- 44, 16, 29	201020.217	0.026	0.050	
47, 16, 31 <- 46, 16, 30	211476.932	-0.004	0.050	
47, 16, 32 <- 46, 16, 31	210863.215	0.026	0.050	
48, 16, 33 <- 47, 16, 32	215796.747	0.080	0.050	
49, 16, 34 <- 48, 16, 33	220712.151	-0.097	0.050	
50, 16, 34 <- 49, 16, 33	228254.073	-0.007	0.050	
50, 16, 35 <- 49, 16, 34	225583.078	0.002	0.050	
51, 16, 35 <- 50, 16, 34	234351.701	-0.047	0.050	
51, 16, 36 <- 50, 16, 35	230378.034	-0.014	0.050	
!				
38, 17, 21 <- 37, 17, 20	166922.402	-0.003	0.050	1.0000
38, 17, 22 <- 37, 17, 21	166922.402	-0.003	0.050	1.0000
39, 17, 22 <- 38, 17, 21	171556.906	-0.007	0.050	1.0000
39, 17, 23 <- 38, 17, 22	171556.906	-0.007	0.050	1.0000
40, 17, 23 <- 39, 17, 22	176215.035	0.034	0.050	
40, 17, 24 <- 39, 17, 23	176214.460	0.001	0.050	
42, 17, 25 <- 41, 17, 24	185608.705	0.011	0.050	
42, 17, 26 <- 41, 17, 25	185606.053	0.021	0.050	
44, 17, 27 <- 43, 17, 26	195123.275	0.027	0.050	
44, 17, 28 <- 43, 17, 27	195111.567	0.022	0.050	
47, 17, 30 <- 46, 17, 29	209701.987	0.013	0.050	
47, 17, 31 <- 46, 17, 30	209613.554	0.019	0.050	
48, 17, 31 <- 47, 17, 30	214679.229	0.047	0.050	
48, 17, 32 <- 47, 17, 31	214514.592	0.016	0.050	
!				
38, 18, 20 <- 37, 18, 19	166450.151	0.029	0.050	1.0000
38, 18, 21 <- 37, 18, 20	166450.151	0.029	0.050	1.0000
39, 18, 22 <- 38, 18, 21	171039.120	0.022	0.050	1.0000
39, 18, 21 <- 38, 18, 20	171039.120	0.022	0.050	1.0000
40, 18, 23 <- 39, 18, 22	175647.201	0.024	0.050	1.0000
40, 18, 22 <- 39, 18, 21	175647.201	0.024	0.050	1.0000
43, 18, 25 <- 42, 18, 24	189598.544	0.048	0.050	
43, 18, 26 <- 42, 18, 25	189598.018	0.012	0.050	
44, 18, 26 <- 43, 18, 25	194296.328	0.032	0.050	
44, 18, 27 <- 43, 18, 26	194295.234	0.024	0.050	
45, 18, 27 <- 44, 18, 26	199020.952	0.004	0.050	
45, 18, 28 <- 44, 18, 27	199018.558	-0.045	0.050	
!				
38, 19, 19 <- 37, 19, 18	166060.349	-0.046	0.050	
39, 19, 20 <- 38, 19, 19	170613.362	0.016	0.050	
42, 19, 23 <- 41, 19, 22	184372.494	0.016	0.050	1.0000
42, 19, 24 <- 41, 19, 23	184372.494	0.016	0.050	1.0000
43, 19, 24 <- 42, 19, 23	188995.385	0.033	0.050	1.0000
43, 19, 25 <- 42, 19, 24	188995.385	0.033	0.050	1.0000
44, 19, 25 <- 43, 19, 24	193638.289	0.041	0.050	1.0000
44, 19, 26 <- 43, 19, 25	193638.289	0.041	0.050	1.0000
!				
38, 20, 18 <- 37, 20, 17	165733.532	0.000	0.050	
39, 20, 19 <- 38, 20, 18	170257.219	0.044	0.050	
40, 20, 20 <- 39, 20, 19	174794.816	0.061	0.050	
42, 20, 22 <- 41, 20, 21	183914.370	0.028	0.050	1.0000

42, 20, 23	<-	41, 20, 22	183914.370	0.028	0.050	1.0000
43, 20, 23	<-	42, 20, 22	188497.817	0.030	0.050	1.0000
43, 20, 24	<-	42, 20, 23	188497.817	0.030	0.050	1.0000
44, 20, 24	<-	43, 20, 23	193098.099	0.036	0.050	1.0000
44, 20, 25	<-	43, 20, 24	193098.099	0.036	0.050	1.0000
45, 20, 25	<-	44, 20, 24	197716.040	-0.022	0.050	1.0000
45, 20, 26	<-	44, 20, 25	197716.040	-0.022	0.050	1.0000
!						
38, 21, 17	<-	37, 21, 16	165455.819	0.019	0.050	
39, 21, 18	<-	38, 21, 17	169955.085	-0.018	0.050	
40, 21, 19	<-	39, 21, 18	174466.678	0.045	0.050	
42, 21, 21	<-	41, 21, 20	183528.424	-0.023	0.050	1.0000
42, 21, 22	<-	41, 21, 21	183528.424	-0.023	0.050	1.0000
43, 21, 22	<-	42, 21, 21	188079.855	0.000	0.050	1.0000
43, 21, 23	<-	42, 21, 22	188079.855	0.000	0.050	1.0000
44, 21, 23	<-	43, 21, 22	192645.637	-0.109	0.050	1.0000
44, 21, 24	<-	43, 21, 23	192645.637	-0.109	0.050	1.0000
!						
38, 22, 16	<-	37, 22, 15	165217.274	0.023	0.050	
39, 22, 17	<-	38, 22, 16	169696.040	0.028	0.050	
40, 22, 18	<-	39, 22, 17	174185.629	-0.003	0.050	
41, 22, 19	<-	40, 22, 18	178686.595	0.067	0.050	
42, 22, 20	<-	41, 22, 19	183199.210	0.068	0.050	1.0000
42, 22, 21	<-	41, 22, 20	183199.210	0.068	0.050	1.0000
43, 22, 21	<-	42, 22, 20	187723.900	-0.041	0.150	1.0000
43, 22, 22	<-	42, 22, 21	187723.900	-0.041	0.050	1.0000
44, 22, 22	<-	43, 22, 21	192261.421	0.001	0.050	1.0000
44, 22, 23	<-	43, 22, 22	192261.421	0.001	0.050	1.0000
45, 22, 23	<-	44, 22, 22	196812.117	0.008	0.050	1.0000
45, 22, 24	<-	44, 22, 23	196812.117	0.008	0.050	1.0000
46, 22, 24	<-	45, 22, 23	201376.576	0.005	0.050	1.0000
46, 22, 25	<-	45, 22, 24	201376.576	0.005	0.050	1.0000
47, 22, 25	<-	46, 22, 24	205955.400	-0.015	0.050	1.0000
47, 22, 26	<-	46, 22, 25	205955.400	-0.015	0.050	1.0000
48, 22, 26	<-	47, 22, 25	210549.225	-0.071	0.050	1.0000
48, 22, 27	<-	47, 22, 26	210549.225	-0.071	0.050	1.0000
!						
38, 23, 15	<-	37, 23, 14	165010.514	0.053	0.050	
40, 23, 17	<-	39, 23, 16	173942.614	0.019	0.050	
41, 23, 18	<-	40, 23, 17	178423.695	0.075	0.050	
43, 23, 20	<-	42, 23, 19	187417.310	-0.115	0.050	1.0000
43, 23, 21	<-	42, 23, 20	187417.310	-0.115	0.050	1.0000
44, 23, 21	<-	43, 23, 20	191930.858	-0.139	0.050	1.0000
44, 23, 22	<-	43, 23, 21	191930.858	-0.139	0.050	1.0000
45, 23, 22	<-	44, 23, 21	196456.162	-0.084	0.050	1.0000
45, 23, 23	<-	44, 23, 22	196456.162	-0.084	0.050	1.0000
!						
38, 24, 14	<-	37, 24, 13	164829.773	0.017	0.050	1.0000
38, 24, 15	<-	37, 24, 14	164829.773	0.017	0.050	1.0000
40, 24, 16	<-	39, 24, 15	173730.660	0.055	0.050	1.0000
40, 24, 17	<-	39, 24, 16	173730.660	0.055	0.050	1.0000
41, 24, 17	<-	40, 24, 16	178194.594	0.062	0.050	1.0000
41, 24, 18	<-	40, 24, 17	178194.594	0.062	0.050	1.0000
!						
38, 25, 13	<-	37, 25, 12	164670.618	-0.104	0.050	1.0000
38, 25, 14	<-	37, 25, 13	164670.618	-0.104	0.050	1.0000
40, 25, 15	<-	39, 25, 14	173544.230	-0.086	0.050	1.0000
40, 25, 16	<-	39, 25, 15	173544.230	-0.086	0.050	1.0000
41, 25, 16	<-	40, 25, 15	177993.321	-0.064	0.050	1.0000
41, 25, 17	<-	40, 25, 16	177993.321	-0.064	0.050	1.0000
42, 25, 17	<-	41, 25, 16	182450.934	-0.061	0.050	1.0000
42, 25, 18	<-	41, 25, 17	182450.934	-0.061	0.050	1.0000
43, 25, 18	<-	42, 25, 17	186917.356	-0.068	0.050	1.0000
43, 25, 19	<-	42, 25, 18	186917.356	-0.068	0.050	1.0000
!						
38, 26, 12	<-	37, 26, 11	164529.861	-0.003	0.050	1.0000
38, 26, 13	<-	37, 26, 12	164529.861	-0.003	0.050	1.0000
40, 26, 14	<-	39, 26, 13	173379.604	0.078	0.050	1.0000
40, 26, 15	<-	39, 26, 14	173379.604	0.078	0.050	1.0000
41, 26, 15	<-	40, 26, 14	177815.690	0.114	0.050	1.0000

41, 26, 16 <- 40, 26, 15

177815.690

0.114

0.050

1.0000
