

Supporting Information

Gas-phase identification of (Z)-1,2-ethenediol, a key prebiotic intermediate in the formose reaction

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1. Experimental Procedures

1.1 Computational Details

The assignment of the rotational spectrum of (*Z*)-1,2-ethenediol (hereafter *Z-4*) was supported by a theoretical simulation relying on computed rotational parameters. A preliminary investigation of the potential energy surface (PES) of the *Z-4* system has been carried out using the double-hybrid B2PLYP density functional^{1, 2} (also including the D3 correction for empirical dispersions by Grimme employing the Becke-Johnson damping function^{3, 4}) in conjunction with the aug-cc-pVTZ basis set^{5, 6}. For the energetics, zero-point energy (ZPE) corrections have also been taken into account at the same level of theory within the harmonic approximation. From a bidimensional relaxed scan of the H2O2C2C1 and C2C1O1H1 dihedral angles, two minima (MIN1 and MIN2 in Figure S1) and two transition states (TS1 and TS2) were located on the PES. For each stationary point, the geometry was optimized using a “very tight” criteria, while its nature was ensured by the diagonalization of the corresponding Hessian matrix. MIN1 is the (*syn,anti*) form of *Z-4* and corresponds to the global minimum on the PES, while MIN2 is the (*anti,anti*) form lying about 15 kJ mol⁻¹ higher in energy. The two minima are connected via TS2 located 21 kJ mol⁻¹ above MIN1. At the same time, MIN1 tunnels between two equivalent forms that interconvert via TS1, with a barrier height of 10 kJ mol⁻¹.

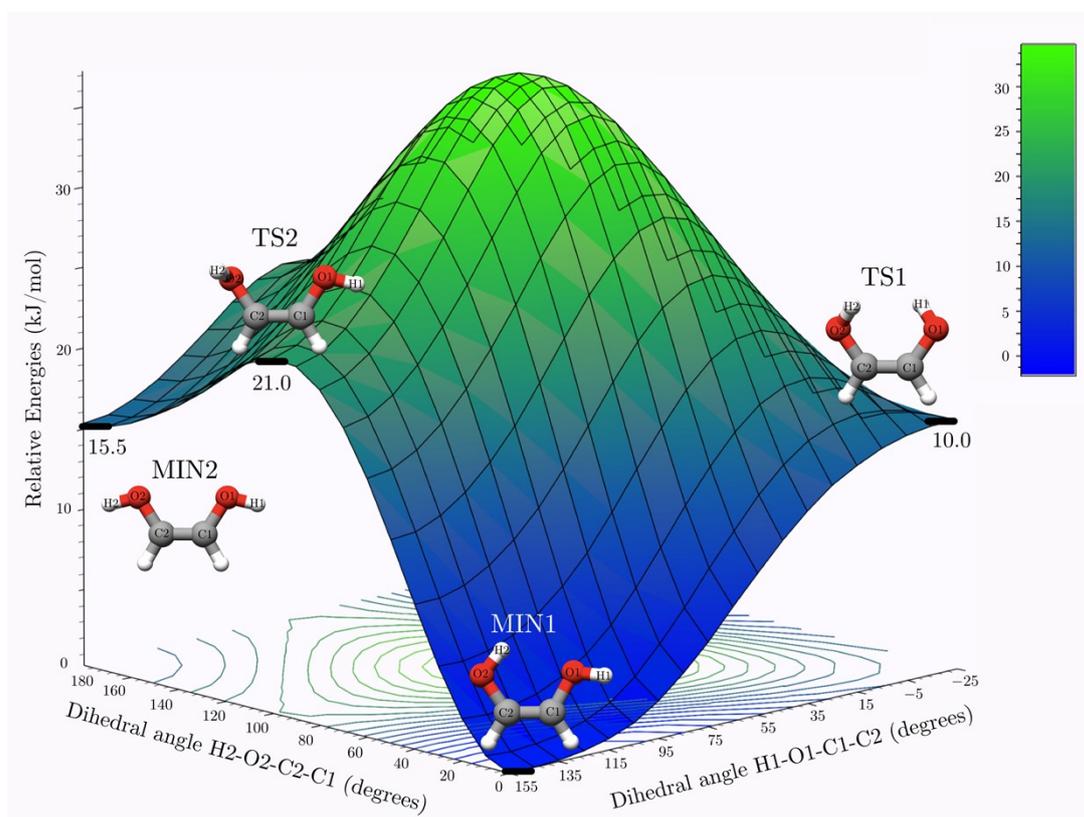


Figure S 1 Portion of the potential energy surface of (*Z*)-1,2-ethenediol (*Z-4*) computed at the B2PLYP/aug-cc-pVTZ level of theory.

Assuming that *Z-4* is produced in the experimental apparatus following a Boltzmann distribution, MIN2 is too high in energy to be observed. Therefore, only MIN1 was considered for the computational spectroscopic characterization. The equilibrium rotational constants of MIN1 were straightforwardly obtained from the equilibrium structure optimized at the CCSD(T)/CBS+CV level within the so-called “gradient” composite scheme⁷⁻⁹. In this approach, the energy gradient to be minimized consists of three contributions:

1. the HF-SCF energy¹⁰ extrapolated to the complete basis set (CBS) limit employing the three-point expression by Feller¹¹ in combination with the cc-pVnZ basis sets⁵, with $n = T, Q, 5$;

- the estimate of the CBS limit for the CCSD(T)¹²⁻¹⁴ correlation energy obtained employing the n^{-3} formula by Helgaker et al.¹⁵ and the cc-pVTZ and cc-pVQZ basis sets⁵;
- the core-valence (CV) contribution calculated as the difference between all-electron and the corresponding frozen-core computation at the CCSD(T)/cc-pCVTZ level^{5, 16}.

The vibrational corrections to the equilibrium rotational constants as well as the vibrationally averaged dipole moment values and the quartic and sextic centrifugal distortion constants have been obtained from anharmonic force field calculations at the fc-MP2/cc-pVTZ level of theory^{5, 17}. All these parameters were finally input in the SPCAT program¹⁸ to simulate the rotational spectrum of Z-4.

In addition, since MIN1 possesses only one H atom out of the molecular plane (HOCC=25°), the barrier to planarity was investigated by performing a rigid scan of the HOCC dihedral angle. The computations, at the B2PLYP-D3BJ/aug-cc-pVTZ level of theory, revealed a barrier to planarity of 0.2 kJ mol⁻¹.

Both the MP2 and CCSD(T) calculations were performed by using the CFOUR package¹⁹, while DFT computations have been carried out with the Gaussian16 suite of program. All the results are collected in Table 1 of the main paper. The B2PLYP-D3BJ/aug-cc-pVTZ geometries of the four stationary points are given in Tables S1-S4.

Table S1. Cartesian coordinates (in Å) of MIN1.

Center Number	Atom	X	Y	Z
1	C	0.674487	0.631287	-0.000830
2	H	1.263247	1.532214	-0.024392
3	C	-0.655574	0.656323	0.005193
4	H	-1.218589	1.575313	-0.015787
5	O	1.417661	-0.511579	0.006405
6	H	0.808273	-1.260141	0.030821
7	O	-1.345748	-0.543858	-0.031039
8	H	-2.219436	-0.428192	0.348361

Table S2. Cartesian coordinates (in Å) of MIN2.

Center Number	Atom	X	Y	Z
1	C	-0.665202	0.619607	0.000000
2	H	-1.199592	1.557156	0.000000
3	C	0.665202	0.619607	0.000000
4	H	1.199592	1.557156	0.000000
5	O	-1.393789	-0.542338	0.000000
6	H	-2.328454	-0.327408	0.000000
7	O	1.393789	-0.542338	0.000000
8	H	2.328454	-0.327408	0.000000

Table S3. Cartesian coordinates (in Å) of TS1.

Center Number	Atom	X	Y	Z
1	C	-0.665341	0.636180	0.006134
2	H	-1.232101	1.551221	0.048046
3	C	0.665341	0.636180	-0.006134
4	H	1.232101	1.551221	-0.048046
5	O	-1.442589	-0.500137	0.016988
6	H	-1.003673	-1.188577	-0.494916
7	O	1.442589	-0.500137	-0.016988
8	H	1.003673	-1.188577	0.494916

Table S4. Cartesian coordinates (in Å) of TS2.

Center Number	Atom	X	Y	Z
1	C	0.662849	0.632089	0.013888
2	H	1.184544	1.579411	0.009489
3	C	-0.667295	0.612809	0.002617
4	H	-1.217045	1.543554	-0.003160
5	O	1.432359	-0.511590	-0.065837
6	H	1.697410	-0.789491	0.815804
7	O	-1.387568	-0.547957	0.004642
8	H	-2.322837	-0.340475	-0.047445

1.2 Synthesis of the Norbornene Derivative and NMR Spectra

Bis-*exo*-5-norbornene-2,3-diol (compound **5**, IUPAC name (1R,2R,3S,4S)-bicyclo[2.2.1]hept-5-en-2,3-diol) was synthesized as reported by Maier et al.²⁰

Before attempting to record the rotational spectrum of **Z-4**, the pyrolytic route was tested with NMR spectroscopy analysis. To this purpose, about 200 mg of **5** were introduced into a small flask and the latter was connected to the oven heated to 750°C and fitted to a cold finger cooled with liquid nitrogen in a vacuum line (0.1 mbar). Compound **5** heated to about 50°C was slowly introduced into the oven. Cyclopentadiene (**6**), **Z-4**, and a small amount of glycolaldehyde (**2**) were formed and condensed on the cold finger; THF-*d*₈ (700 μL) was then added. At the end of the reaction, the cold finger was disconnected from the vacuum line, filled with dry nitrogen and the liquid nitrogen was removed with compressed air. The products and the solvent were flowed into an NMR tube attached to the bottom of the cold finger.

Compounds **Z-4** and **2** can be selectively trapped at -80°C in a U-tube placed after the oven, but attempts to re-vaporize **Z-4** have failed. The quality of the vacuum results in a higher **4:2** ratio. ¹H NMR (THF-*d*₈, 400 MHz, 193 K): δ 5.54 (s, 2H, CH), 6.25 (s brd, 2H, OH). ¹³C NMR (THF-*d*₈, 100 MHz, 193 K): δ 123.5 (dd, ¹J_{CH} = 182.3 Hz, ²J_{CH} = 17.2 Hz, CH).

1.3 Rotational Spectrum

The rotational spectrum of **Z-4** has been recorded between 80-125 GHz and 240-375 GHz with a frequency-modulation millimeter/submillimetre-wave spectrometer, whose detailed description has been reported elsewhere²¹,²².

Briefly, the spectrometer employs several Gunn diodes working in the W and F bands as primary radiation source. Higher frequencies are obtained by coupling the Gunn diodes with passive frequency multipliers (doublers and triplers in cascade). The frequency and phase stability of the radiation source is provided by a phase-lock-loop which uses a 75 MHz sine wave modulated signal as reference, while the frequency accuracy is ensured by a rubidium atomic clock.

The radiation is fed into a 3 m long glass absorption cell connected to the flash vacuum pyrolysis apparatus at one end and to a pumping system at the other end. The title molecule has been produced by flowing the vapours of the precursor species **5** through a 30 cm long quartz tube heated at 750°C by a tubular furnace. In order to increase its vapour pressure, compound **5** has been maintained at 50°C with the use of a heating tape. The pressure inside the absorption cell has been kept at around 4 μ bar; in these conditions, the transitions of **Z-4** appear as the most intense ones in the spectrum. Signals belonging to **2** and **6** have been observed as well.

The output radiation is then detected by a zero-bias Schottky barrier detector, pre-amplified, and sent to a lock-in amplifier. The lock-in acts as a resistor-capacitor filter and demodulates the signal at twice the modulation frequency, so that the second derivative of the original line shape is actually recorded ($2f$ detection scheme).

The measurement uncertainty on any observed transition is estimated to between 20 and 50 kHz, depending on the attained signal-to-noise ratio of the spectrum, line width, and line contamination.

2. Results and Discussion

The (*syn,anti*) form of (*Z*)-1,2-ethenediol is an asymmetric top rotor close to the prolate limit (asymmetry parameter $\kappa = -0.79$). At the equilibrium, it possesses a permanent electric dipole moment $\mu = 2.27$ D with non-vanishing components along all the three principal inertia axes ($|\mu_a| = 1.96$ D, $|\mu_b| = 0.62$ D, and $|\mu_c| = 0.97$ D).

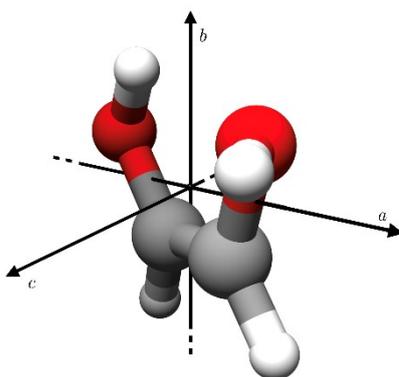


Figure S 2 *Z*-(*syn,anti*)-1,2-ethenediol in its principal inertia system.

Although *ab initio* calculations suggest a C_1 symmetric equilibrium structure, the tunneling between two equivalent positions of the hydroxy groups experimentally observed indicates that **Z-4** belongs to the $C_2(M)$ permutation-inversion symmetry group. The tunneling motion causes the splitting of each J_{KaKc} rotational energy level into two. The two inversion substates can be conveniently labelled as $\nu = 0$ and $\nu = 1$, with the 0 state being more stable by 0.362(4) MHz (see Table 1 of the main text). Since the tunneling motion inverts the sign of μ_a and μ_c , *a*-type ($\Delta K_a = \text{even}$, $\Delta K_c = \text{odd}$) and *c*-type transitions ($\Delta K_a = \text{odd}$, $\Delta K_c = \text{even}$) occur

between the two inversion states. Conversely, *b*-type transitions ($\Delta K_a = \text{odd}$, $\Delta K_c = \text{odd}$) occur within each state. Moreover, since the tunneling motion exchanges two pairs of identical hydrogen nuclei, the intensity of the observed spectral features is governed by spin-statistics effects. In particular, symmetric nuclear spin functions ($I_{\text{TOT}} = 0, 1, 2$) only combine with symmetric rotation-inversion states (identified by $v + K_a + K_c = \text{even}$), while antisymmetric nuclear spin functions ($I_{\text{TOT}} = 1$) only combine with antisymmetric rotation-inversion states ($v + K_a + K_c = \text{odd}$). As a result, each transition is observed as a closely-spaced doublet with an intensity ratio of 10:6. The position of the energy levels has been modelled using a rotational-torsional Watson *S*-reduced Hamiltonian²³ arranged in the RAS (reduced-axis system) formalism²⁴. In this approach, the energy levels manifold is derived by fitting the rotational constants *A*, *B*, and *C* and the energy difference E^* between the two inversion states together with their centrifugal distortion dependencies. In this work, terms up to 8th power of the rotational angular momentum have been included in the Hamiltonian. Furthermore, the interaction between the 0 and 1 states has been taken into account through the *c*-type Coriolis term F_{ab} . In total, 1153 transitions have been recorded up to 375 GHz and analysed in a weighted least-squares procedure with SPFIT¹⁸. More precisely, the dataset includes 578 distinct lines (505 of *a*-type and 73 of *b*-type) and probes rotational levels up to $J = 36$ and $K_a = 26$, thus allowing for the accurate determination of several spectroscopic constants. For example, the rotational constants have been obtained with an average deviation of 0.0016%, while the uncertainty of the quartic centrifugal distortion parameters is around 0.018%. Five higher-order distortion constants (H_J , H_{JK} , H_{KJ} , h_1 , and L_{KKJ}) have also been determined, whereas H_K , h_2 , and h_3 have been kept fixed at their computed values. The energy difference E^* between the two inversion states has been determined at kHz accuracy. The Coriolis coefficient F_{ab} is well constrained (-218 ± 6 MHz) and comparable to that found in ethylene glycol (≈ -143 MHz)²⁵. At the end of the fitting procedure, the root-mean-square error of the residuals is 33.1 kHz. The list of all the observed transition frequencies is given at the end of this file.

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List of observed transitions and their residuals

Line	J'	Ka'	Kc'	v'	J	Ka	Kc	v	Frequency (MHz)	Obs-Calc (MHz)	Uncertainty (MHz)	Blends	Obs-Calc
1	8	1	8	0	7	1	7	1	80666.387	-0.001	0.020		
2	8	1	8	1	7	1	7	0	80667.119	0.002	0.020		
3	7	1	6	0	6	1	5	1	80863.450	-0.007	0.020		
4	7	1	6	1	6	1	5	0	80864.198	0.004	0.020		
5	8	0	8	0	7	0	7	1	81636.712	0.007	0.020		
6	8	0	8	1	7	0	7	0	81637.444	0.008	0.020		
7	7	2	5	0	6	2	4	1	81867.486	-0.007	0.020		
8	7	2	5	1	6	2	4	0	81868.225	0.001	0.020		
9	8	2	7	0	7	2	6	1	87125.770	-0.007	0.020		
10	8	2	7	1	7	2	6	0	87126.503	-0.001	0.020		
11	8	7	2	0	7	7	1	1	89055.241	-0.015	0.020	-0.016	0.38
12	8	7	1	0	7	7	0	1	89055.241	-0.016	0.020	-0.016	0.62
13	8	7	2	1	7	7	1	0	89055.870	0.004	0.020	0.004	0.62
14	8	7	1	1	7	7	0	0	89055.870	0.004	0.020	0.004	0.38
15	8	5	4	0	7	5	3	1	89265.568	-0.004	0.020		
16	8	5	4	1	7	5	3	0	89266.249	0.006	0.020		
17	8	5	3	0	7	5	2	1	89267.905	-0.008	0.020		
18	8	5	3	1	7	5	2	0	89268.582	-0.003	0.020		
19	8	3	6	0	7	3	5	1	89452.203	-0.007	0.020		
20	8	3	6	1	7	3	5	0	89452.917	-0.009	0.020		
21	8	4	5	0	7	4	4	1	89492.129	-0.009	0.020		
22	8	4	5	1	7	4	4	0	89492.835	0.001	0.020		
23	8	4	4	0	7	4	3	1	89581.326	-0.007	0.020		
24	8	4	4	1	7	4	3	0	89582.031	0.001	0.020		
25	9	1	9	0	8	1	8	1	90372.269	0.002	0.020		
26	9	1	9	1	8	1	8	0	90372.995	-0.002	0.020		
27	9	0	9	0	8	0	8	1	91027.765	0.003	0.020		
28	9	0	9	1	8	0	8	0	91028.492	-0.001	0.020		
29	8	1	7	0	7	1	6	1	91470.694	-0.001	0.020		
30	8	1	7	1	7	1	6	0	91471.436	0.001	0.020		
31	8	2	6	0	7	2	5	1	94031.454	-0.003	0.020		
32	8	2	6	1	7	2	5	0	94032.196	0.002	0.020		
33	9	2	8	0	8	2	7	1	97520.817	0.000	0.020		
34	9	2	8	1	8	2	7	0	97521.544	-0.003	0.020		
35	10	1	10	0	9	1	9	1	100024.287	-0.007	0.020		
36	10	1	10	1	9	1	9	0	100025.007	-0.018	0.020		
37	9	8	1	0	8	8	0	1	100183.793	-0.005	0.020	-0.005	0.38
38	9	8	2	0	8	8	1	1	100183.793	-0.005	0.020	-0.005	0.62
39	9	8	1	1	8	8	0	0	100184.369	-0.005	0.020	-0.005	0.62
40	9	8	2	1	8	8	1	0	100184.369	-0.005	0.020	-0.005	0.38
41	9	7	3	0	8	7	2	1	100250.009	-0.006	0.020	-0.007	0.62
42	9	7	2	0	8	7	1	1	100250.009	-0.008	0.020	-0.007	0.38
43	9	7	3	1	8	7	2	0	100250.625	-0.002	0.020	-0.003	0.38
44	9	7	2	1	8	7	1	0	100250.625	-0.003	0.020	-0.003	0.62
45	9	6	4	0	8	6	3	1	100360.577	0.055	0.020	0.019	0.62
46	9	6	3	0	8	6	2	1	100360.577	-0.086	0.020	0.019	0.38
47	9	6	4	1	8	6	3	0	100361.283	0.116	0.020	0.010	0.38
48	9	6	3	1	8	6	2	0	100361.283	-0.025	0.020	0.010	0.62
49	10	0	10	0	9	0	9	1	100447.927	0.016	0.020		
50	10	0	10	1	9	0	9	0	100448.648	0.005	0.020		
51	9	5	5	0	8	5	4	1	100552.700	-0.007	0.020		
52	9	5	5	1	8	5	4	0	100553.388	0.006	0.020		
53	9	5	4	0	8	5	3	1	100560.236	-0.015	0.020		
54	9	5	4	1	8	5	3	0	100560.918	-0.008	0.020		
55	9	3	7	0	8	3	6	1	100602.020	0.002	0.020		
56	9	3	7	1	8	3	6	0	100602.739	0.001	0.020		
57	9	4	6	0	8	4	5	1	100843.173	-0.018	0.020		
58	9	4	6	1	8	4	5	0	100843.879	-0.013	0.020		
59	9	4	5	0	8	4	4	1	101052.912	-0.022	0.020		
60	9	4	5	1	8	4	4	0	101053.620	-0.015	0.020		
61	9	1	8	0	8	1	7	1	101665.334	0.018	0.020		
62	9	1	8	1	8	1	7	0	101666.073	0.015	0.020		
63	9	3	6	0	8	3	5	1	103111.554	-0.008	0.020		
64	9	3	6	1	8	3	5	0	103112.279	-0.007	0.020		
65	9	2	7	0	8	2	6	1	105989.348	0.003	0.020		

66	9	2	7	1	8	2	6	0	105990.088	0.000	0.020		
67	10	2	9	0	9	2	8	1	107770.617	0.006	0.020		
68	10	2	9	1	9	2	8	0	107771.339	-0.004	0.020		
69	11	1	11	0	10	1	10	1	109636.969	0.015	0.020		
70	11	1	11	1	10	1	10	0	109637.682	-0.002	0.020		
71	11	0	11	0	10	0	10	1	109901.947	0.017	0.020		
72	11	0	11	1	10	0	10	0	109902.660	-0.001	0.020		
73	10	9	1	0	9	9	0	1	111314.993	-0.009	0.020	-0.009	0.62
74	10	9	2	0	9	9	1	1	111314.993	-0.009	0.020	-0.009	0.38
75	10	9	1	1	9	9	0	0	111315.538	-0.004	0.020	-0.004	0.38
76	10	9	2	1	9	9	1	0	111315.538	-0.004	0.020	-0.004	0.62
77	10	8	2	0	9	8	1	1	111373.424	-0.008	0.020	-0.008	0.62
78	10	8	3	0	9	8	2	1	111373.424	-0.008	0.020	-0.008	0.38
79	10	8	3	1	9	8	2	0	111374.010	0.000	0.020	0.000	0.62
80	10	8	2	1	9	8	1	0	111374.010	0.000	0.020	0.000	0.38
81	10	1	9	0	9	1	8	1	111460.063	0.013	0.020		
82	10	1	9	1	9	1	8	0	111460.791	-0.003	0.020		
83	10	7	4	0	9	7	3	1	111466.988	-0.001	0.020	-0.007	0.38
84	10	7	3	0	9	7	2	1	111466.988	-0.009	0.020	-0.007	0.62
85	10	7	4	1	9	7	3	0	111467.609	0.005	0.020	0.004	0.62
86	10	7	3	1	9	7	2	0	111467.609	-0.002	0.020	0.004	0.38
87	10	6	5	0	9	6	4	1	111621.080	-0.007	0.020		
88	10	6	4	0	9	6	3	1	111621.674	0.063	0.020	0.001	0.5
89	10	6	5	1	9	6	4	0	111621.674	-0.061	0.020	0.001	0.5
90	10	6	4	1	9	6	3	0	111622.267	0.007	0.020		
91	10	3	8	0	9	3	7	1	111663.360	0.008	0.020		
92	10	3	8	1	9	3	7	0	111664.077	0.001	0.020		
93	10	5	6	0	9	5	5	1	111883.384	0.013	0.020		
94	10	5	6	1	9	5	5	0	111884.053	0.004	0.020		
95	10	5	5	0	9	5	4	1	111904.248	0.012	0.020		
96	10	5	5	1	9	5	4	0	111904.925	0.011	0.020		
97	16	2	14	0	16	2	15	1	112032.215	0.038	0.030		
98	16	2	14	1	16	2	15	0	112032.896	-0.017	0.030		
99	10	4	7	0	9	4	6	1	112222.633	0.008	0.020		
100	10	4	7	1	9	4	6	0	112223.330	0.000	0.020		
101	10	4	6	0	9	4	5	1	112664.002	0.013	0.020		
102	10	4	6	1	9	4	5	0	112664.702	0.008	0.020		
103	11	2	10	0	10	2	9	1	117879.888	0.011	0.020		
104	11	2	10	1	10	2	9	0	117880.603	-0.007	0.020		
105	12	1	12	0	11	1	11	1	119222.134	0.019	0.020		
106	12	1	12	1	11	1	11	0	119222.838	-0.007	0.020		
107	12	0	12	0	11	0	11	1	119383.866	0.019	0.020		
108	12	0	12	1	11	0	11	0	119384.569	-0.008	0.020		
109	11	1	10	0	10	1	9	1	120938.619	0.010	0.020		
110	11	1	10	1	10	1	9	0	120939.343	-0.009	0.020		
111	11	10	1	0	10	10	0	1	122448.970	0.004	0.020	0.004	0.38
112	11	10	2	0	10	10	1	1	122448.970	0.004	0.020	0.004	0.62
113	11	10	1	1	10	10	0	0	122449.468	0.001	0.020	0.001	0.62
114	11	10	2	1	10	10	1	0	122449.468	0.001	0.020	0.001	0.38
115	11	9	2	0	10	9	1	1	122500.654	-0.004	0.020	-0.004	0.38
116	11	9	3	0	10	9	2	1	122500.654	-0.004	0.020	-0.004	0.62
117	11	9	2	1	10	9	1	0	122501.190	-0.008	0.020	-0.008	0.62
118	11	9	3	1	10	9	2	0	122501.190	-0.008	0.020	-0.008	0.38
119	11	8	4	0	10	8	3	1	122581.408	-0.007	0.020	-0.007	0.62
120	11	8	3	0	10	8	2	1	122581.408	-0.007	0.020	-0.007	0.38
121	11	8	4	1	10	8	3	0	122581.992	-0.002	0.020	-0.002	0.38
122	11	8	3	1	10	8	2	0	122581.992	-0.002	0.020	-0.002	0.62
123	11	3	9	0	10	3	8	1	122608.723	0.013	0.020		
124	11	3	9	1	10	3	8	0	122609.438	0.000	0.020		
125	11	7	5	0	10	7	4	1	122708.729	0.007	0.020	-0.005	0.62
126	11	7	4	0	10	7	3	1	122708.729	-0.024	0.020	-0.005	0.38
127	11	7	5	1	10	7	4	0	122709.357	0.019	0.020	-0.001	0.38
128	11	7	4	1	10	7	3	0	122709.357	-0.013	0.020	-0.001	0.62
129	11	6	6	0	10	6	5	1	122916.372	-0.003	0.020		
130	11	6	6	1	10	6	5	0	122917.020	-0.006	0.020		
131	11	6	5	0	10	6	4	1	122918.029	-0.010	0.020		
132	11	6	5	1	10	6	4	0	122918.680	-0.010	0.020		
133	11	5	7	0	10	5	6	1	123259.618	0.001	0.020		
134	11	5	7	1	10	5	6	0	123260.293	-0.006	0.020		
135	11	5	6	0	10	5	5	1	123310.926	0.001	0.020		
136	11	5	6	1	10	5	5	0	123311.601	-0.007	0.020		
137	11	4	8	0	10	4	7	1	123612.748	0.011	0.020		
138	11	4	8	1	10	4	7	0	123613.446	0.000	0.020		
139	23	4	20	0	22	4	19	1	252350.974	-0.003	0.020		
140	23	4	20	1	22	4	19	0	252351.698	0.039	0.020		
141	22	6	16	0	21	6	15	1	252651.520	0.021	0.020		
142	22	6	16	1	21	6	15	0	252652.236	0.058	0.020		
143	26	1	26	0	25	1	25	1	252729.858	0.085	0.020	0.056	0.32
144	26	0	26	0	25	0	25	1	252729.858	0.046	0.020	0.056	0.68
145	26	1	26	1	25	1	25	0	252730.617	-0.023	0.020	-0.033	0.68
146	26	0	26	1	25	0	25	0	252730.617	-0.062	0.020	-0.033	0.32
147	25	2	24	0	24	2	23	1	252739.948	0.034	0.020		
148	25	2	24	1	24	2	23	0	252740.569	0.043	0.020		
149	25	1	24	0	24	1	23	1	252745.474	-0.048	0.020		
150	25	1	24	1	24	1	23	0	252746.102	-0.032	0.020		
151	24	3	22	0	23	3	21	1	252835.952	-0.036	0.020		
152	24	3	22	1	23	3	21	0	252836.590	-0.046	0.020		
153	24	2	22	0	23	2	21	1	253039.025	0.030	0.020		
154	24	2	22	1	23	2	21	0	253039.676	0.031	0.020		
155	23	3	20	0	22	3	19	1	255261.338	-0.041	0.020		
156	23	3	20	1	22	3	19	0	255262.068	-0.014	0.020		
157	23	20	3	1	22	20	2	0	256316.710	-0.010	0.020	0.004	0.31
158	23	20	4	1	22	20	3	0	256316.710	-0.010	0.020	0.004	0.19
159	23	20	3	0	22	20	2	1	256316.710	0.018	0.020	0.004	0.19
160	23	20	4	0	22	20	3	1	256316.710	0.018	0.020	0.004	0.31
161									0	0.0139	0.1		
162	23	19	4	1	22	19	3	0	256319.960	-0.010	0.020	0.000	0.31

163	23	19	5	1	22	19	4	0	256319.960	-0.010	0.020	0.000	0.19
164	23	19	4	0	22	19	3	1	256319.960	0.010	0.020	0.000	0.19
165	23	19	5	0	22	19	4	1	256319.960	0.010	0.020	0.000	0.31
166									0	0.0101	0.1		
167	23	21	2	1	22	21	1	0	256326.288	-0.038	0.020	-0.010	0.31
168	23	21	3	1	22	21	2	0	256326.288	-0.038	0.020	-0.010	0.19
169	23	21	2	0	22	21	1	1	256326.288	0.019	0.020	-0.010	0.19
170	23	21	3	0	22	21	2	1	256326.288	0.019	0.020	-0.010	0.31
171									0	0.0284	0.1		
172	23	18	5	0	22	18	4	1	256338.329	0.027	0.020	0.011	0.19
173	23	18	6	0	22	18	5	1	256338.329	0.027	0.020	0.011	0.31
174	23	18	5	1	22	18	4	0	256338.329	-0.004	0.020	0.011	0.31
175	23	18	6	1	22	18	5	0	256338.329	-0.004	0.020	0.011	0.19
176									0	0.0152	0.1		
177	23	17	6	0	22	17	5	1	256374.725	0.032	0.020	0.004	0.19
178	23	17	7	0	22	17	6	1	256374.725	0.032	0.020	0.004	0.31
179	23	17	6	1	22	17	5	0	256374.725	-0.023	0.020	0.004	0.31
180	23	17	7	1	22	17	6	0	256374.725	-0.023	0.020	0.004	0.19
181									0	0.0277	0.1		
182	23	16	7	0	22	16	6	1	256433.071	0.047	0.020	0.001	0.19
183	23	16	8	0	22	16	7	1	256433.071	0.047	0.020	0.001	0.31
184	23	16	7	1	22	16	6	0	256433.071	-0.045	0.020	0.001	0.31
185	23	16	8	1	22	16	7	0	256433.071	-0.045	0.020	0.001	0.19
186									0	0.046	0.1		
187	23	15	8	0	22	15	7	1	256518.622	0.056	0.020	-0.013	0.19
188	23	15	9	0	22	15	8	1	256518.622	0.056	0.020	-0.013	0.31
189	23	15	8	1	22	15	7	0	256518.622	-0.082	0.020	-0.013	0.31
190	23	15	9	1	22	15	8	0	256518.622	-0.082	0.020	-0.013	0.19
191									0	0.0689	0.1		
192	23	14	9	0	22	14	8	1	256638.678	0.083	0.020	-0.013	0.19
193	23	14	10	0	22	14	9	1	256638.678	0.083	0.020	-0.013	0.31
194	23	14	9	1	22	14	8	0	256638.678	-0.108	0.020	-0.013	0.31
195	23	14	10	1	22	14	9	0	256638.678	-0.108	0.020	-0.013	0.19
196									0	0.0953	0.1		
197	23	13	10	0	22	13	9	1	256803.522	0.113	0.020	-0.011	0.19
198	23	13	11	0	22	13	10	1	256803.522	0.113	0.020	-0.011	0.31
199	23	13	10	1	22	13	9	0	256803.522	-0.135	0.020	-0.011	0.31
200	23	13	11	1	22	13	10	0	256803.522	-0.135	0.020	-0.011	0.19
201									0	0.1241	0.1		
202	23	12	12	0	22	12	11	1	257028.195	0.166	0.020	0.012	0.31
203	23	12	11	0	22	12	10	1	257028.195	0.166	0.020	0.012	0.19
204	23	12	12	1	22	12	11	0	257028.195	-0.143	0.020	0.012	0.19
205	23	12	11	1	22	12	10	0	257028.195	-0.143	0.020	0.012	0.31
206									0	0.1544	0.1		
207	23	11	13	0	22	11	12	1	257335.363	0.168	0.020	-0.020	0.31
208	23	11	12	0	22	11	11	1	257335.363	0.163	0.020	-0.020	0.19
209	23	11	13	1	22	11	12	0	257335.363	-0.203	0.020	-0.020	0.19
210	23	11	12	1	22	11	11	0	257335.363	-0.208	0.020	-0.020	0.31
211									0	0.1866	0.1		
212	23	10	14	0	22	10	13	1	257761.215	0.264	0.020	-0.027	0.31
213	23	10	13	0	22	10	12	1	257761.215	0.115	0.020	-0.027	0.19
214	23	10	14	1	22	10	13	0	257761.215	-0.169	0.020	-0.027	0.19
215	23	10	13	1	22	10	12	0	257761.215	-0.318	0.020	-0.027	0.31
216									0	0.2617	0.2		
217	22	4	18	0	21	4	17	1	258072.306	0.018	0.020		
218	22	4	18	1	21	4	17	0	258073.087	0.034	0.020		
219	23	9	15	0	22	9	14	1	258365.087	0.066	0.020		
220	23	9	14	1	22	9	13	0	258368.903	-0.040	0.020		
221	23	5	19	0	22	5	18	1	258794.810	0.018	0.020		
222	23	5	19	1	22	5	18	0	258795.518	0.043	0.020		
223	22	5	17	0	21	5	16	1	259072.670	0.014	0.020		
224	22	5	17	1	21	5	16	0	259073.447	0.044	0.020		
225	23	8	16	0	22	8	15	1	259238.217	0.015	0.040		
226	23	8	16	1	22	8	15	0	259238.828	0.073	0.040		
227	23	8	15	0	22	8	14	1	259295.868	-0.048	0.040		
228	23	8	15	1	22	8	14	0	259296.447	-0.022	0.040		
229	23	7	17	0	22	7	16	1	260383.189	0.011	0.030		
230	23	7	17	1	22	7	16	0	260383.841	0.054	0.030		
231	23	6	18	0	22	6	17	1	261000.027	0.007	0.030		
232	23	6	18	1	22	6	17	0	261000.730	0.053	0.030		
233	23	7	16	0	22	7	15	1	261053.178	-0.045	0.030		
234	23	7	16	1	22	7	15	0	261053.829	-0.007	0.030		
235	24	4	21	0	23	4	20	1	262142.095	-0.034	0.020		
236	24	4	21	1	23	4	20	0	262142.781	-0.013	0.020		
237	27	1	27	0	26	1	26	1	262251.028	0.031	0.020	0.026	0.62
238	27	0	27	0	26	0	26	1	262251.028	0.010	0.020	0.026	0.38
239	27	1	27	1	26	1	26	0	262251.833	-0.016	0.020	-0.033	0.38
240	27	0	27	1	26	0	26	0	262251.833	-0.038	0.020	-0.033	0.62
241	26	2	25	0	25	2	24	1	262257.788	-0.031	0.020		
242	26	2	25	1	25	2	24	0	262258.357	-0.051	0.020		
243	26	1	25	0	25	1	24	1	262261.108	0.046	0.020		
244	26	1	25	1	25	1	24	0	262261.662	0.011	0.020		
245	25	3	23	0	24	3	22	1	262362.396	0.034	0.020		
246	25	3	23	1	24	3	22	0	262363.012	0.022	0.020		
247	25	2	23	0	24	2	22	1	262489.046	-0.031	0.020		
248	25	2	23	1	24	2	22	0	262489.678	-0.028	0.020		
249	24	3	21	0	23	3	20	1	264229.036	0.019	0.020		
250	24	3	21	1	23	3	20	0	264229.730	0.032	0.020		
251	23	6	17	0	22	6	16	1	265576.733	-0.038	0.020		
252	23	6	17	1	22	6	16	0	265577.454	0.001	0.020		
253	24	20	4	1	23	20	3	0	267487.115	0.023	0.020	0.010	0.19
254	24	20	5	1	23	20	4	0	267487.115	0.023	0.020	0.010	0.31
255	24	20	4	0	23	20	3	1	267487.115	-0.004	0.020	0.010	0.31
256	24	20	5	0	23	20	4	1	267487.115	-0.004	0.020	0.010	0.19
257	24	21	3	0	23	21	2	1	267491.690	0.000	0.020	0.003	0.31
258	24	21	4	0	23	21	3	1	267491.690	0.000	0.020	0.003	0.19
259	24	21	3	1	23	21	2	0	267491.690	0.005	0.020	0.003	0.19

260	24	21	4	1	23	21	3	0	267491.690	0.005	0.020	0.003	0.31
261	24	19	5	1	23	19	4	0	267496.789	-0.020	0.020	-0.034	0.19
262	24	19	6	1	23	19	5	0	267496.789	-0.020	0.020	-0.034	0.31
263	24	19	5	0	23	19	4	1	267496.789	-0.048	0.020	-0.034	0.31
264	24	19	6	0	23	19	5	1	267496.789	-0.048	0.020	-0.034	0.19
265	24	22	2	0	23	22	1	1	267508.584	0.032	0.020	0.011	0.31
266	24	22	3	0	23	22	2	1	267508.584	0.032	0.020	0.011	0.19
267	24	22	2	1	23	22	1	0	267508.584	-0.010	0.020	0.011	0.19
268	24	22	3	1	23	22	2	0	267508.584	-0.010	0.020	0.011	0.31
269	24	18	6	1	23	18	5	0	267523.421	0.024	0.020	0.018	0.19
270	24	18	7	1	23	18	6	0	267523.421	0.024	0.020	0.018	0.31
271	24	18	6	0	23	18	5	1	267523.421	0.012	0.020	0.018	0.31
272	24	18	7	0	23	18	6	1	267523.421	0.012	0.020	0.018	0.19
273	24	17	7	1	23	17	6	0	267570.181	-0.021	0.020	-0.012	0.19
274	24	17	8	1	23	17	7	0	267570.181	-0.021	0.020	-0.012	0.31
275	24	17	7	0	23	17	6	1	267570.181	-0.003	0.020	-0.012	0.31
276	24	17	8	0	23	17	7	1	267570.181	-0.003	0.020	-0.012	0.19
277	24	16	8	1	23	16	7	0	267641.631	-0.029	0.020	0.000	0.19
278	24	16	9	1	23	16	8	0	267641.631	-0.029	0.020	0.000	0.31
279	24	16	8	0	23	16	7	1	267641.631	0.030	0.020	0.000	0.31
280	24	16	9	0	23	16	8	1	267641.631	0.030	0.020	0.000	0.19
281	24	15	9	1	23	15	8	0	267743.720	-0.056	0.020	-0.001	0.19
282	24	15	10	1	23	15	9	0	267743.720	-0.056	0.020	-0.001	0.31
283	24	15	9	0	23	15	8	1	267743.720	0.053	0.020	-0.001	0.31
284	24	15	10	0	23	15	9	1	267743.720	0.053	0.020	-0.001	0.19
285	24	14	10	0	23	14	9	1	267884.767	0.086	0.020	0.003	0.31
286	24	14	11	0	23	14	10	1	267884.767	0.086	0.020	0.003	0.19
287	24	14	10	1	23	14	9	0	267884.767	-0.080	0.020	0.003	0.19
288	24	14	11	1	23	14	10	0	267884.767	-0.080	0.020	0.003	0.31
289	24	13	11	0	23	13	10	1	268076.529	0.110	0.020	-0.004	0.31
290	24	13	12	0	23	13	11	1	268076.529	0.110	0.020	-0.004	0.19
291	24	13	11	1	23	13	10	0	268076.529	-0.117	0.020	-0.004	0.19
292	24	13	12	1	23	13	11	0	268076.529	-0.117	0.020	-0.004	0.31
293	23	4	19	0	22	4	18	1	268149.496	-0.035	0.030		
294	23	4	19	1	22	4	18	0	268150.261	-0.023	0.030		
295	24	12	13	0	23	12	12	1	268336.255	0.147	0.020	0.002	0.19
296	24	12	12	0	23	12	11	1	268336.255	0.146	0.020	0.002	0.31
297	24	12	13	1	23	12	12	0	268336.255	-0.143	0.020	0.002	0.31
298	24	12	12	1	23	12	11	0	268336.255	-0.144	0.020	0.002	0.19
299	24	11	14	0	23	11	13	1	268690.117	0.177	0.020	-0.007	0.19
300	24	11	13	0	23	11	12	1	268690.117	0.164	0.020	-0.007	0.31
301	24	11	14	1	23	11	13	0	268690.117	-0.178	0.020	-0.007	0.31
302	24	11	13	1	23	11	12	0	268690.117	-0.190	0.020	-0.007	0.19
303	24	10	15	0	23	10	14	1	269180.039	0.382	0.020	0.000	0.19
304	24	10	15	1	23	10	14	0	269180.039	-0.037	0.020	0.000	0.31
305	24	10	14	0	23	10	13	1	269180.039	0.037	0.020	0.000	0.31
306	24	10	14	1	23	10	13	0	269180.039	-0.382	0.020	0.000	0.19
307									0	0.2359	0.1		
308	24	9	16	1	23	9	15	0	269874.575	-0.016	0.030		
309	24	9	15	0	23	9	14	1	269881.280	0.042	0.030		
310	29	1	29	0	28	1	28	1	281288.208	0.005	0.030	0.003	0.62
311	29	0	29	0	28	0	28	1	281288.208	-0.001	0.030	0.003	0.38
312	29	1	29	1	28	1	28	0	281289.051	0.019	0.030	0.016	0.38
313	29	0	29	1	28	0	28	0	281289.051	0.013	0.030	0.016	0.62
314	23	5	18	0	22	5	17	1	271699.595	-0.030	0.020		
315	23	5	18	1	22	5	17	0	271700.369	-0.007	0.020		
316	28	1	28	0	27	1	27	1	271770.527	0.031	0.020	0.024	0.38
317	28	0	28	0	27	0	27	1	271770.527	0.020	0.020	0.024	0.62
318	28	1	28	1	27	1	27	0	271771.306	-0.031	0.020	-0.035	0.62
319	28	0	28	1	27	0	27	0	271771.306	-0.043	0.020	-0.035	0.38
320	27	2	26	0	26	2	25	1	271774.182	0.063	0.040		
321	27	2	26	1	26	2	25	0	271774.715	0.034	0.040		
322	27	1	26	0	26	1	25	1	271775.951	-0.030	0.040		
323	27	1	26	1	26	1	25	0	271776.466	-0.077	0.040		
324	25	4	22	0	24	4	21	1	271843.742	0.030	0.040		
325	25	4	22	1	24	4	21	0	271844.399	0.041	0.040		
326	26	3	24	0	25	3	23	1	271878.665	-0.037	0.040		
327	26	3	24	1	25	3	23	0	271879.266	-0.041	0.040		
328	26	3	23	0	25	3	22	1	282461.619	0.021	0.030		
329	26	3	23	1	25	3	22	0	282462.272	0.042	0.030		
330	25	8	18	0	24	8	17	1	282538.496	0.036	0.040		
331	25	8	18	1	24	8	17	0	282539.029	0.034	0.040		
332	25	8	17	0	24	8	16	1	282732.647	-0.058	0.040		
333	25	8	17	1	24	8	16	0	282733.227	-0.014	0.040		
334	25	6	20	0	24	6	19	1	283618.108	0.016	0.040		
335	25	6	20	1	24	6	19	0	283618.783	0.052	0.040		
336	25	7	19	0	24	7	18	1	283767.643	0.007	0.040		
337	25	7	19	1	24	7	18	0	283768.280	0.050	0.040		
338	24	5	19	0	23	5	18	1	283885.691	0.022	0.040		
339	24	5	19	1	23	5	18	0	283886.464	0.045	0.040		
340	25	7	18	0	24	7	17	1	285535.241	-0.056	0.020		
341	25	7	18	1	24	7	17	0	285535.896	-0.006	0.020		
342	25	4	21	0	24	4	20	1	286832.933	-0.047	0.020		
343	25	4	21	1	24	4	20	0	286833.675	-0.017	0.020		
344	26	21	5	0	25	21	4	1	289830.184	-0.071	0.020	-0.003	0.31
345	26	21	6	0	25	21	5	1	289830.184	-0.071	0.020	-0.003	0.19
346	26	21	5	1	25	21	4	0	289830.184	0.065	0.020	-0.003	0.19
347	26	21	6	1	25	21	5	0	289830.184	0.065	0.020	-0.003	0.31
348	26	19	7	1	25	19	6	0	289862.774	0.052	0.020	-0.014	0.19
349	26	19	8	1	25	19	7	0	289862.774	0.052	0.020	-0.014	0.31
350	26	19	7	0	25	19	6	1	289862.774	-0.080	0.020	-0.014	0.31
351	26	19	8	0	25	19	7	1	289862.774	-0.080	0.020	-0.014	0.19
352	26	18	8	1	25	18	7	0	289908.697	0.064	0.020	0.012	0.19
353	26	18	9	1	25	18	8	0	289908.697	0.064	0.020	0.012	0.31
354	26	18	8	0	25	18	7	1	289908.697	-0.041	0.020	0.012	0.31
355	26	18	9	0	25	18	8	1	289908.697	-0.041	0.020	0.012	0.19
356	26	17	9	1	25	17	8	0	289979.667	0.032	0.020	0.000	0.19

357	26	17	10	1	25	17	9	0	289979.667	0.032	0.020	0.000	0.31
358	26	17	9	0	25	17	8	1	289979.667	-0.032	0.020	0.000	0.31
359	26	17	10	0	25	17	9	1	289979.667	-0.032	0.020	0.000	0.19
360	26	16	10	1	25	16	9	0	290081.470	0.073	0.020	0.066	0.19
361	26	16	11	1	25	16	10	0	290081.470	0.073	0.020	0.066	0.31
362	26	16	10	0	25	16	9	1	290081.470	0.060	0.020	0.066	0.31
363	26	16	11	0	25	16	10	1	290081.470	0.060	0.020	0.066	0.19
364	26	15	11	1	25	15	10	0	290221.601	-0.008	0.020	0.014	0.19
365	26	15	12	1	25	15	11	0	290221.601	-0.008	0.020	0.014	0.31
366	26	15	11	0	25	15	10	1	290221.601	0.037	0.020	0.014	0.31
367	26	15	12	0	25	15	11	1	290221.601	0.037	0.020	0.014	0.19
368	26	13	13	0	25	13	12	1	290664.512	0.088	0.020	-0.001	0.31
369	26	13	14	0	25	13	13	1	290664.512	0.088	0.020	-0.001	0.19
370	26	13	14	1	25	13	13	0	290664.512	-0.089	0.020	-0.001	0.31
371	26	13	13	1	25	13	12	0	290664.512	-0.089	0.020	-0.001	0.19
372	30	1	30	0	29	1	29	1	290804.052	0.002	0.020	0.000	0.38
373	30	0	30	0	29	0	29	1	290804.052	-0.001	0.020	0.000	0.62
374	30	1	30	1	29	1	29	0	290804.846	-0.018	0.020	-0.019	0.62
375	30	0	30	1	29	0	29	0	290804.846	-0.021	0.020	-0.019	0.38
376	28	3	26	0	27	3	25	1	290894.249	-0.021	0.030		
377	28	3	26	1	27	3	25	0	290894.755	-0.068	0.030		
378	28	2	26	0	27	2	25	1	290923.353	0.053	0.030		
379	28	2	26	1	27	2	25	0	290923.923	0.071	0.030		
380	26	12	15	0	25	12	14	1	291004.882	0.124	0.020	-0.001	0.19
381	26	12	14	0	25	12	13	1	291004.882	0.121	0.020	-0.001	0.31
382	26	12	15	1	25	12	14	0	291004.882	-0.123	0.020	-0.001	0.31
383	26	12	14	1	25	12	13	0	291004.882	-0.126	0.020	-0.001	0.19
384	27	4	24	0	26	4	23	1	291057.326	0.016	0.030		
385	27	4	24	1	26	4	23	0	291057.967	0.058	0.030		
386	26	11	16	0	25	11	15	1	291466.421	0.154	0.020	-0.042	0.19
387	26	11	15	0	25	11	14	1	291466.421	0.080	0.020	-0.042	0.31
388	26	11	16	1	25	11	15	0	291466.421	-0.164	0.020	-0.042	0.31
389	26	11	15	1	25	11	14	0	291466.421	-0.237	0.020	-0.042	0.19
390	27	3	24	0	26	3	23	1	291712.874	-0.028	0.030		
391	27	3	24	1	26	3	23	0	291713.488	-0.019	0.030		
392	25	6	19	0	24	6	18	1	292045.923	-0.037	0.030		
393	25	6	19	1	24	6	18	0	292046.644	-0.007	0.030		
394	26	10	16	0	25	10	15	1	292106.047	0.061	0.030	-0.084	0.62
395	26	10	16	1	25	10	15	0	292106.047	-0.327	0.030	-0.084	0.38
396	26	9	18	1	25	9	17	0	293007.321	-0.034	0.030		
397	26	9	17	0	25	9	16	1	293034.603	0.037	0.030		
398	25	5	20	0	24	5	19	1	295545.905	-0.032	0.020		
399	25	5	20	1	24	5	19	0	295546.672	-0.008	0.020		
400	26	4	22	0	25	4	21	1	295686.690	0.006	0.020		
401	26	4	22	1	25	4	21	0	295687.402	0.033	0.020		
402	27	5	23	0	26	5	22	1	299893.653	0.047	0.030		
403	27	5	23	1	26	5	22	0	299894.267	0.046	0.030		
404	30	2	29	0	29	2	28	1	300313.773	0.742	0.020	0.013	0.16
405	30	1	29	0	29	2	28	0	300313.773	0.699	0.020	0.013	0.19
406	30	1	29	1	29	2	28	1	300313.773	0.371	0.020	0.013	0.03
407	30	1	29	0	29	1	28	1	300313.773	0.071	0.020	0.013	0.12
408	30	2	29	1	29	2	28	0	300313.773	-0.046	0.020	0.013	0.12
409	30	2	29	0	29	1	28	0	300313.773	-0.346	0.020	0.013	0.03
410	30	2	29	1	29	1	28	1	300313.773	-0.674	0.020	0.013	0.19
411	30	1	29	1	29	1	28	0	300313.773	-0.717	0.020	0.013	0.16
412									0	0.5979	0.25		
413	31	1	31	0	30	1	30	1	300318.001	0.031	0.020	0.030	0.62
414	31	0	31	0	30	0	30	1	300318.001	0.029	0.020	0.030	0.38
415	31	1	31	1	30	1	30	0	300318.785	0.019	0.020	0.018	0.38
416	31	0	31	1	30	0	30	0	300318.785	0.017	0.020	0.018	0.62
417	29	3	27	0	28	3	26	1	300397.240	0.084	0.030		
418	29	2	27	1	28	2	26	0	300415.114	-0.044	0.030		
419	28	4	25	1	27	4	24	0	300602.292	-0.069	0.030		
420	27	20	7	1	26	20	6	0	301018.144	0.106	0.020	0.003	0.31
421	27	20	8	1	26	20	7	0	301018.144	0.106	0.020	0.003	0.19
422	27	20	7	0	26	20	6	1	301018.144	-0.100	0.020	0.003	0.19
423	27	20	8	0	26	20	7	1	301018.144	-0.100	0.020	0.003	0.31
424	27	23	4	0	26	23	3	1	301021.447	-0.090	0.030	-0.023	0.19
425	27	23	5	0	26	23	4	1	301021.447	-0.090	0.030	-0.023	0.31
426	27	23	4	1	26	23	3	0	301021.447	0.044	0.030	-0.023	0.31
427	27	23	5	1	26	23	4	0	301021.447	0.044	0.030	-0.023	0.19
428	28	3	25	0	27	3	24	1	301030.768	0.029	0.030		
429	28	3	25	1	27	3	24	0	301031.370	0.056	0.030		
430	27	18	9	1	26	18	8	0	301109.249	0.071	0.020	-0.007	0.31
431	27	18	10	1	26	18	9	0	301109.249	0.071	0.020	-0.007	0.19
432	27	18	9	0	26	18	8	1	301109.249	-0.084	0.020	-0.007	0.19
433	27	18	10	0	26	18	9	1	301109.249	-0.084	0.020	-0.007	0.31
434	27	17	10	1	26	17	9	0	301194.146	0.060	0.020	0.005	0.31
435	27	17	11	1	26	17	10	0	301194.146	0.060	0.020	0.005	0.19
436	27	17	10	0	26	17	9	1	301194.146	-0.049	0.020	0.005	0.19
437	27	17	11	0	26	17	10	1	301194.146	-0.049	0.020	0.005	0.31
438	34	5	30	0	34	4	31	0	251950.449	0.010	0.020	0.005	0.38
439	34	5	30	1	34	4	31	1	251950.449	0.002	0.020	0.005	0.62
440	24	2	22	1	23	3	21	1	252511.464	0.019	0.020	0.013	0.38
441	24	2	22	0	23	3	21	0	252511.464	0.010	0.020	0.013	0.62
442	25	1	24	1	24	2	23	1	252732.625	0.016	0.020	0.012	0.62
443	25	1	24	0	24	2	23	0	252732.625	0.005	0.020	0.012	0.38
444	25	2	24	1	24	1	23	1	252753.448	0.020	0.020	0.013	0.38
445	25	2	24	0	24	1	23	0	252753.448	0.009	0.020	0.013	0.62
446	24	3	22	1	23	2	21	1	253364.185	0.008	0.020	0.004	0.62
447	24	3	22	0	23	2	21	0	253364.185	-0.003	0.020	0.004	0.38
448	9	6	4	1	8	5	3	1	253461.285	-0.034	0.020	-0.042	0.38
449	9	6	4	0	8	5	3	0	253461.285	-0.047	0.020	-0.042	0.62
450	9	6	3	1	8	5	4	1	253464.542	-0.003	0.020	-0.008	0.62
451	9	6	3	0	8	5	4	0	253464.542	-0.016	0.020	-0.008	0.38
452	32	3	29	0	32	2	30	0	253935.784	0.001	0.030	-0.001	0.63
453	32	3	29	1	32	2	30	1	253935.784	-0.006	0.030	-0.001	0.37

454	32	4	29	0	32	3	30	0	254041.086	0.012	0.030	0.007	0.37
455	32	4	29	1	32	3	30	1	254041.086	0.004	0.030	0.007	0.63
456	22	4	19	1	21	3	18	1	255623.859	-0.070	0.030	-0.078	0.62
457	22	4	19	0	21	3	18	0	255623.859	-0.091	0.030	-0.078	0.38
458	24	3	21	0	23	4	20	0	257876.330	0.075	0.030	0.076	0.62
459	24	3	21	1	23	4	20	1	257876.330	0.077	0.030	0.076	0.38
460	12	5	7	1	11	4	8	1	258847.802	-0.016	0.030	-0.023	0.38
461	12	5	7	0	11	4	8	0	258847.802	-0.028	0.030	-0.023	0.62
462	7	7	1	1	6	6	0	1	259124.987	0.046	0.030	0.038	0.19
463	7	7	0	1	6	6	1	1	259124.987	0.045	0.030	0.038	0.31
464	7	7	1	0	6	6	0	0	259124.987	0.031	0.030	0.038	0.31
465	7	7	0	0	6	6	1	0	259124.987	0.030	0.030	0.038	0.19
466	23	4	20	1	22	3	19	1	261614.816	-0.008	0.030	-0.020	0.38
467	23	4	20	0	22	3	19	0	261614.816	-0.027	0.030	-0.020	0.62
468	35	5	31	0	35	4	32	0	261788.810	0.018	0.030	0.016	0.62
469	35	5	31	1	35	4	32	1	261788.810	0.012	0.030	0.016	0.38
470	26	1	25	1	25	2	24	1	262253.747	0.003	0.020	-0.005	0.37
471	26	1	25	0	25	2	24	0	262253.747	-0.010	0.020	-0.005	0.63
472	26	2	25	1	25	1	24	1	262265.718	0.005	0.020	0.000	0.63
473	26	2	25	0	25	1	24	0	262265.718	-0.008	0.020	0.000	0.37
474	25	3	23	1	24	2	22	1	262687.590	0.058	0.020	0.051	0.38
475	25	3	23	0	24	2	22	0	262687.590	0.047	0.020	0.051	0.62
476	19	5	15	1	18	4	14	1	301189.831	-0.010	0.030	-0.031	0.38
477	19	5	15	0	18	4	14	0	301189.831	-0.043	0.030	-0.031	0.62
478	20	10	10	1	20	9	11	1	262833.742	0.312	0.050	0.065	0.19
479	20	10	10	0	20	9	11	0	262833.742	0.284	0.050	0.065	0.31
480	20	10	11	1	20	9	12	1	262833.742	-0.154	0.050	0.065	0.31
481	20	10	11	0	20	9	12	0	262833.742	-0.181	0.050	0.065	0.19
482	21	10	11	1	21	9	12	1	262383.790	0.011	0.030	0.000	0.62
483	21	10	11	0	21	9	12	0	262383.790	-0.018	0.030	0.000	0.38
484	21	10	12	1	21	9	13	1	262384.941	0.021	0.030	0.003	0.38
485	21	10	12	0	21	9	13	0	262384.941	-0.008	0.030	0.003	0.62
486	22	10	12	1	22	9	13	1	261859.847	0.026	0.030	0.007	0.38
487	22	10	12	0	22	9	13	0	261859.847	-0.004	0.030	0.007	0.62
488	22	10	13	1	22	9	14	1	261862.494	0.010	0.030	-0.001	0.62
489	22	10	13	0	22	9	14	0	261862.494	-0.020	0.030	-0.001	0.38
490	19	10	9	1	19	9	10	1	263216.976	0.108	0.020	0.005	0.31
491	19	10	9	0	19	9	10	0	263216.976	0.081	0.020	0.005	0.19
492	19	10	10	1	19	9	11	1	263216.976	-0.071	0.020	0.005	0.19
493	19	10	10	0	19	9	11	0	263216.976	-0.098	0.020	0.005	0.31
494	18	10	8	1	18	9	9	1	263541.446	0.064	0.020	0.019	0.19
495	18	10	8	0	18	9	9	0	263541.446	0.038	0.020	0.019	0.31
496	18	10	9	1	18	9	10	1	263541.446	-0.001	0.020	0.019	0.31
497	18	10	9	0	18	9	10	0	263541.446	-0.027	0.020	0.019	0.19
498	33	3	30	0	33	2	31	0	263665.106	-0.006	0.030	-0.010	0.38
499	33	3	30	1	33	2	31	1	263665.106	-0.013	0.030	-0.010	0.62
500	33	4	30	0	33	3	31	0	263729.439	-0.019	0.030	-0.022	0.62
501	33	4	30	1	33	3	31	1	263729.439	-0.026	0.030	-0.022	0.38
502	29	10	19	1	29	9	20	1	255086.306	0.004	0.020	-0.011	0.62
503	29	10	19	0	29	9	20	0	255086.306	-0.036	0.020	-0.011	0.38
504	29	10	20	1	29	9	21	1	255428.341	0.053	0.020	0.029	0.38
505	29	10	20	0	29	9	21	0	255428.341	0.014	0.020	0.029	0.62
506	28	10	18	1	28	9	19	1	256514.349	0.016	0.020	-0.008	0.38
507	28	10	18	0	28	9	19	0	256514.349	-0.022	0.020	-0.008	0.62
508	27	10	17	1	27	9	18	1	257746.678	0.026	0.020	0.012	0.62
509	27	10	17	0	27	9	18	0	257746.678	-0.011	0.020	0.012	0.38
510	26	10	16	1	26	9	17	1	258815.115	0.033	0.020	0.011	0.38
511	26	10	16	0	26	9	17	0	258815.115	-0.002	0.020	0.011	0.62
512	26	10	17	1	26	9	18	1	258867.391	0.029	0.020	0.016	0.62
513	26	10	17	0	26	9	18	0	258867.391	-0.006	0.020	0.016	0.38
514	25	10	15	1	25	9	16	1	259743.704	0.007	0.020	-0.005	0.62
515	25	10	15	0	25	9	16	0	259743.704	-0.027	0.020	-0.005	0.38
516	24	10	14	1	24	9	15	1	260551.186	0.013	0.020	-0.007	0.38
517	24	10	14	0	24	9	15	0	260551.186	-0.019	0.020	-0.007	0.62
518	24	10	15	1	24	9	16	1	260563.915	0.016	0.020	0.004	0.62
519	24	10	15	0	24	9	16	0	260563.915	-0.016	0.020	0.004	0.38
520	23	10	13	1	23	9	14	1	261252.460	0.019	0.020	0.007	0.62
521	23	10	13	0	23	9	14	0	261252.460	-0.012	0.020	0.007	0.38
522	27	16	11	1	26	16	10	0	301313.185	-0.001	0.020	-0.027	0.31
523	27	16	12	1	26	16	11	0	301313.185	-0.001	0.020	-0.027	0.19
524	27	16	11	0	26	16	10	1	301313.185	-0.053	0.020	-0.027	0.19
525	27	16	12	0	26	16	11	1	301313.185	-0.053	0.020	-0.027	0.31
526	27	15	12	1	26	15	11	0	301475.181	0.052	0.020	0.057	0.31
527	27	15	13	1	26	15	12	0	301475.181	0.052	0.020	0.057	0.19
528	27	15	12	0	26	15	11	1	301475.181	0.062	0.020	0.057	0.19
529	27	15	13	0	26	15	12	1	301475.181	0.062	0.020	0.057	0.31
530	27	14	13	1	26	14	12	0	301691.881	-0.066	0.020	-0.027	0.31
531	27	14	14	1	26	14	13	0	301691.881	-0.066	0.020	-0.027	0.19
532	27	14	13	0	26	14	12	1	301691.881	0.012	0.020	-0.027	0.19
533	27	14	14	0	26	14	13	1	301691.881	0.012	0.020	-0.027	0.31
534	27	13	15	0	26	13	14	1	301980.742	0.049	0.020	-0.026	0.31
535	27	13	14	0	26	13	13	1	301980.742	0.049	0.020	-0.026	0.19
536	27	13	15	1	26	13	14	0	301980.742	-0.100	0.020	-0.026	0.19
537	27	13	14	1	26	13	13	0	301980.742	-0.100	0.020	-0.026	0.31
538	27	12	16	0	26	12	15	1	302367.185	0.133	0.020	0.018	0.31
539	27	12	15	0	26	12	14	1	302367.185	0.127	0.020	0.018	0.19
540	27	12	16	1	26	12	15	0	302367.185	-0.090	0.020	0.018	0.19
541	27	12	15	1	26	12	14	0	302367.185	-0.096	0.020	0.018	0.31
542	27	11	17	0	26	11	16	1	302890.533	0.247	0.020	0.016	0.31
543	27	11	16	0	26	11	15	1	302890.533	0.081	0.020	0.016	0.19
544	27	11	17	1	26	11	16	0	302890.533	-0.049	0.020	0.016	0.19
545	27	11	16	1	26	11	15	0	302890.533	-0.216	0.020	0.016	0.31
546	27	10	18	0	26	10	17	1	303613.877	0.064	0.030		
547	27	10	17	1	26	10	16	0	303617.493	-0.065	0.030		
548	27	4	23	0	26	4	22	1	304422.903	-0.031	0.030		
549	27	4	23	1	26	4	22	0	304423.562	-0.025	0.030		
550	27	9	19	0	26	9	18	1	304633.728	0.018	0.030		

551	27	9	18	1	26	9	17	0	304685.945	-0.078	0.030		
552	26	6	20	0	25	6	19	1	305315.690	0.000	0.030		
553	26	6	20	1	25	6	19	0	305316.404	0.021	0.030		
554	27	6	22	0	26	6	21	1	305611.558	0.003	0.040		
555	27	6	22	1	26	6	21	0	305612.168	0.003	0.040		
556	27	8	19	1	26	8	18	0	306558.891	-0.057	0.040		
557	27	7	21	0	26	7	20	1	307030.160	0.052	0.040		
558	27	7	21	1	26	7	20	0	307030.776	0.096	0.040		
559	28	5	24	0	27	5	23	1	309781.076	-0.054	0.040		
560	28	5	24	1	27	5	23	0	309781.653	-0.067	0.040		
561	31	2	30	0	30	2	29	1	309822.903	0.096	0.040	0.077	0.67
562	31	1	30	0	30	1	29	1	309822.903	0.037	0.040	0.077	0.33
563	31	2	30	1	30	2	29	0	309823.671	-0.121	0.040	-0.161	0.33
564	31	1	30	1	30	1	29	0	309823.671	-0.180	0.040	-0.161	0.67
565	32	1	32	0	31	1	31	1	309829.857	-0.039	0.030	-0.040	0.38
566	32	0	32	0	31	0	31	1	309829.857	-0.040	0.030	-0.040	0.62
567	32	1	32	1	31	1	31	0	309830.635	-0.035	0.030	-0.035	0.62
568	32	0	32	1	31	0	31	0	309830.635	-0.036	0.030	-0.035	0.38
569	30	3	28	1	29	3	27	0	309898.406	-0.108	0.040		
570	30	2	28	0	29	2	27	1	309908.525	0.049	0.040	-0.134	0.63
571	30	2	28	1	29	2	27	0	309908.525	-0.443	0.040	-0.134	0.37
572	29	4	26	0	28	4	25	1	310121.064	0.078	0.040		
573	29	3	26	1	28	3	25	0	310398.212	-0.059	0.040		
574	27	7	20	0	26	7	19	1	311035.362	-0.056	0.030		
575	27	7	20	1	26	7	19	0	311036.012	-0.005	0.030		
576	28	22	6	1	27	22	5	0	312175.040	0.077	0.020	-0.054	0.19
577	28	22	7	1	27	22	6	0	312175.040	0.077	0.020	-0.054	0.31
578	28	22	6	0	27	22	5	1	312175.040	-0.186	0.020	-0.054	0.31
579	28	22	7	0	27	22	6	1	312175.040	-0.186	0.020	-0.054	0.19
580	28	21	7	1	27	21	6	0	312179.510	0.104	0.020	-0.035	0.19
581	28	21	8	1	27	21	7	0	312179.510	0.104	0.020	-0.035	0.31
582	28	21	7	0	27	21	6	1	312179.510	-0.174	0.020	-0.035	0.31
583	28	21	8	0	27	21	7	1	312179.510	-0.174	0.020	-0.035	0.19
584	28	23	5	1	27	23	4	0	312186.248	0.065	0.020	-0.047	0.19
585	28	23	6	1	27	23	5	0	312186.248	0.065	0.020	-0.047	0.31
586	28	23	5	0	27	23	4	1	312186.248	-0.159	0.020	-0.047	0.31
587	28	23	6	0	27	23	5	1	312186.248	-0.159	0.020	-0.047	0.19
588	28	20	8	1	27	20	7	0	312202.106	0.101	0.020	-0.034	0.19
589	28	20	9	1	27	20	8	0	312202.106	0.101	0.020	-0.034	0.31
590	28	20	8	0	27	20	7	1	312202.106	-0.170	0.020	-0.034	0.31
591	28	20	9	0	27	20	8	1	312202.106	-0.170	0.020	-0.034	0.19
592/	28	24	4	1	27	24	3	0	312211.068	-0.015	0.030	-0.093	0.19
593	28	24	5	1	27	24	4	0	312211.068	-0.015	0.030	-0.093	0.31
594	28	24	4	0	27	24	3	1	312211.068	-0.171	0.030	-0.093	0.31
595	28	24	5	0	27	24	4	1	312211.068	-0.171	0.030	-0.093	0.19
596	28	19	9	1	27	19	8	0	312246.014	0.087	0.020	-0.036	0.19
597	28	19	10	1	27	19	9	0	312246.014	0.087	0.020	-0.036	0.31
598	28	19	9	0	27	19	8	1	312246.014	-0.158	0.020	-0.036	0.31
599	28	19	10	0	27	19	9	1	312246.014	-0.158	0.020	-0.036	0.19
600	28	18	10	1	27	18	9	0	312315.338	0.082	0.020	-0.021	0.19
601	28	18	11	1	27	18	10	0	312315.338	0.082	0.020	-0.021	0.31
602	28	18	10	0	27	18	9	1	312315.338	-0.124	0.020	-0.021	0.31
603	28	18	11	0	27	18	10	1	312315.338	-0.124	0.020	-0.021	0.19
604	28	17	11	1	27	17	10	0	312415.392	0.048	0.020	-0.030	0.19
605	28	17	12	1	27	17	11	0	312415.392	0.048	0.020	-0.030	0.31
606	28	17	11	0	27	17	10	1	312415.392	-0.107	0.020	-0.030	0.31
607	28	17	12	0	27	17	11	1	312415.392	-0.107	0.020	-0.030	0.19
608	28	16	12	1	27	16	11	0	312553.333	0.010	0.020	-0.037	0.19
609	28	16	13	1	27	16	12	0	312553.333	0.010	0.020	-0.037	0.31
610	28	16	12	0	27	16	11	1	312553.333	-0.084	0.020	-0.037	0.31
611	28	16	13	0	27	16	12	1	312553.333	-0.084	0.020	-0.037	0.19
612	28	15	13	1	27	15	12	0	312738.885	-0.012	0.020	-0.026	0.19
613	28	15	14	1	27	15	13	0	312738.885	-0.012	0.020	-0.026	0.31
614	28	15	13	0	27	15	12	1	312738.885	-0.039	0.020	-0.026	0.31
615	28	15	14	0	27	15	13	1	312738.885	-0.039	0.020	-0.026	0.19
616	28	14	14	1	27	14	13	0	312985.553	-0.039	0.020	-0.017	0.19
617	28	14	15	1	27	14	14	0	312985.553	-0.039	0.020	-0.017	0.31
618	28	14	14	0	27	14	13	1	312985.553	0.006	0.020	-0.017	0.31
619	28	14	15	0	27	14	14	1	312985.553	0.006	0.020	-0.017	0.19
620	28	4	24	0	27	4	23	1	313170.138	0.023	0.050		
621	28	4	24	1	27	4	23	0	313170.774	0.039	0.050		
622	28	13	16	1	27	13	15	0	313312.756	-0.055	0.020	0.004	0.31
623	28	13	15	1	27	13	14	0	313312.756	-0.056	0.020	0.004	0.19
624	28	13	16	0	27	13	15	1	313312.756	0.065	0.020	0.004	0.19
625	28	13	15	0	27	13	14	1	313312.756	0.064	0.020	0.004	0.31
626	28	12	17	0	27	12	16	1	313749.351	0.139	0.020	0.033	0.19
627	28	12	16	0	27	12	15	1	313749.351	0.124	0.020	0.033	0.31
628	28	12	17	1	27	12	16	0	313749.351	-0.057	0.020	0.033	0.31
629	28	12	16	1	27	12	15	0	313749.351	-0.073	0.020	0.033	0.19
630	28	11	18	0	27	11	17	1	314340.306	0.344	0.020	0.026	0.19
631	28	11	18	1	27	11	17	0	314340.306	0.071	0.020	0.026	0.31
632	28	11	17	0	27	11	16	1	314340.306	-0.020	0.020	0.026	0.31
633	28	11	17	1	27	11	16	0	314340.306	-0.293	0.020	0.026	0.19
634	28	10	19	1	27	10	18	0	315157.402	-0.060	0.040		
635	28	10	18	0	27	10	17	1	315163.908	0.057	0.040		
636	28	9	20	1	27	9	19	0	316302.137	-0.083	0.040		
637	28	12	16	1	28	11	17	1	316310.219	0.289	0.020	-0.046	0.19
638	28	12	16	0	28	11	17	0	316310.219	0.250	0.020	-0.046	0.31
639	28	12	17	1	28	11	18	1	316310.219	-0.341	0.020	-0.046	0.31
640	28	12	17	0	28	11	18	0	316310.219	-0.380	0.020	-0.046	0.19
641	28	6	23	0	27	6	22	1	316331.605	-0.037	0.050		
642	28	6	23	1	27	6	22	0	316332.176	-0.057	0.050		
643	28	9	19	0	27	9	18	1	316396.098	-0.034	0.040		
644	27	5	22	1	26	5	21	0	317098.148	-0.022	0.040		
645	28	8	21	1	27	8	20	0	317743.714	0.028	0.040		
646	27	6	21	0	26	6	20	1	318368.527	-0.042	0.030		
647	27	6	21	1	26	6	20	0	318369.223	-0.038	0.030		

648	28	7	22	0	27	7	21	1	318545.870	0.012	0.050		
649	28	7	22	1	27	7	21	0	318546.479	0.064	0.050		
650	28	8	20	0	27	8	19	1	318682.600	-0.047	0.040		
651	32	2	31	0	31	2	30	1	319330.750	0.092	0.030	0.060	0.39
652	32	1	31	0	31	1	30	1	319330.750	0.040	0.030	0.060	0.61
653	32	2	31	1	31	2	30	0	319331.422	-0.035	0.030	-0.055	0.61
654	32	1	31	1	31	1	30	0	319331.422	-0.087	0.030	-0.055	0.39
655	33	1	33	0	32	1	32	1	319339.750	-0.011	0.020	-0.012	0.62
656	33	0	33	0	32	0	32	1	319339.750	-0.012	0.020	-0.012	0.38
657	33	1	33	1	32	1	32	0	319340.524	0.015	0.020	0.015	0.38
658	33	0	33	1	32	0	32	0	319340.524	0.015	0.020	0.015	0.62
659	31	2	29	1	30	3	28	1	319388.641	0.019	0.040	0.012	0.63
660	31	2	29	0	30	3	28	0	319388.641	0.002	0.040	0.012	0.37
661	31	3	29	0	30	3	28	1	319397.318	0.048	0.040		
662	31	2	29	1	30	2	28	0	319403.827	-0.116	0.040		
663	31	3	29	1	30	2	28	1	319412.583	0.010	0.040	-0.001	0.37
664	31	3	29	0	30	2	28	0	319412.583	-0.007	0.040	-0.001	0.63
665	29	5	25	0	28	5	24	1	319553.615	0.068	0.050		
666	30	4	27	1	29	4	26	0	319623.778	-0.061	0.050		
667	30	3	27	0	29	3	26	1	319799.731	0.000	0.050		
668	29	4	25	0	28	4	24	1	322005.400	-0.034	0.050		
669	29	4	25	1	28	4	24	0	322006.014	-0.004	0.050		
670	29	22	7	1	28	22	6	0	323347.083	0.198	0.020	0.025	0.31
671	29	22	8	1	28	22	7	0	323347.083	0.198	0.020	0.025	0.19
672	29	22	7	0	28	22	6	1	323347.083	-0.148	0.020	0.025	0.19
673	29	22	8	0	28	22	7	1	323347.083	-0.148	0.020	0.025	0.31
674									0	0.1734	0.25		
675	29	23	6	1	28	23	5	0	323352.749	0.193	0.020	0.034	0.31
676	29	23	7	1	28	23	6	0	323352.749	0.193	0.020	0.034	0.19
677	29	23	6	0	28	23	5	1	323352.749	-0.124	0.020	0.034	0.19
678	29	23	7	0	28	23	6	1	323352.749	-0.124	0.020	0.034	0.31
679									0	0.1584	0.25		
680/	29	21	8	1	28	21	7	0	323358.577	0.252	0.020	0.075	0.31
681	29	21	9	1	28	21	8	0	323358.577	0.252	0.020	0.075	0.19
682	29	21	8	0	28	21	7	1	323358.577	-0.101	0.020	0.075	0.19
683	29	21	9	0	28	21	8	1	323358.577	-0.101	0.020	0.075	0.31
684									0	0.1762	0.25		
685	29	24	5	1	28	24	4	0	323373.285	0.147	0.020	0.018	0.31
686	29	24	6	1	28	24	5	0	323373.285	0.147	0.020	0.018	0.19
687	29	24	5	0	28	24	4	1	323373.285	-0.111	0.020	0.018	0.19
688	29	24	6	0	28	24	5	1	323373.285	-0.111	0.020	0.018	0.31
689									0	0.1293	0.25		
690	29	20	9	1	28	20	8	0	323389.873	0.225	0.020	0.057	0.31
691	29	20	10	1	28	20	9	0	323389.873	0.225	0.020	0.057	0.19
692	29	20	9	0	28	20	8	1	323389.873	-0.112	0.020	0.057	0.19
693	29	20	10	0	28	20	9	1	323389.873	-0.112	0.020	0.057	0.31
694									0	0.1689	0.25		
695	29	25	4	1	28	25	3	0	323406.959	0.105	0.020	0.021	0.31
696	29	25	5	1	28	25	4	0	323406.959	0.105	0.020	0.021	0.19
697	29	25	4	0	28	25	3	1	323406.959	-0.063	0.020	0.021	0.19
698	29	25	5	0	28	25	4	1	323406.959	-0.063	0.020	0.021	0.31
699									0	0.0838	0.25		
700	29	19	10	1	28	19	9	0	323444.590	0.216	0.020	0.063	0.31
701	29	19	11	1	28	19	10	0	323444.590	0.216	0.020	0.063	0.19
702	29	19	10	0	28	19	9	1	323444.590	-0.090	0.020	0.063	0.19
703	29	19	11	0	28	19	10	1	323444.590	-0.090	0.020	0.063	0.31
704									0	0.153	0.25		
705	29	18	11	1	28	18	10	0	323527.241	0.189	0.020	0.058	0.31
706	29	18	12	1	28	18	11	0	323527.241	0.189	0.020	0.058	0.19
707	29	18	11	0	28	18	10	1	323527.241	-0.072	0.020	0.058	0.19
708	29	18	12	0	28	18	11	1	323527.241	-0.072	0.020	0.058	0.31
709									0	0.1301	0.25		
710	29	17	12	1	28	17	11	0	323643.709	0.064	0.020	-0.038	0.31
711	29	17	13	1	28	17	12	0	323643.709	0.064	0.020	-0.038	0.19
712	29	17	12	0	28	17	11	1	323643.709	-0.140	0.020	-0.038	0.19
713	29	17	13	0	28	17	12	1	323643.709	-0.140	0.020	-0.038	0.31
714	29	16	13	1	28	16	12	0	323802.134	0.021	0.020	-0.048	0.31
715	29	16	14	1	28	16	13	0	323802.134	0.021	0.020	-0.048	0.19
716	29	16	13	0	28	16	12	1	323802.134	-0.117	0.020	-0.048	0.19
717	29	16	14	0	28	16	13	1	323802.134	-0.117	0.020	-0.048	0.31
718	29	15	14	1	28	15	13	0	324013.346	0.037	0.020	0.004	0.31
719	29	15	15	1	28	15	14	0	324013.346	0.037	0.020	0.004	0.19
720	29	15	14	0	28	15	13	1	324013.346	-0.029	0.020	0.004	0.19
721	29	15	15	0	28	15	14	1	324013.346	-0.029	0.020	0.004	0.31
722	28	7	21	0	27	7	20	1	324211.710	0.030	0.050		
723	28	7	21	1	27	7	20	0	324212.332	0.056	0.050		
724	29	14	15	1	28	14	14	0	324292.441	0.046	0.020	0.051	0.31
725	29	14	16	1	28	14	15	0	324292.441	0.046	0.020	0.051	0.19
726	29	14	15	0	28	14	14	1	324292.441	0.056	0.020	0.051	0.19
727	29	14	16	0	28	14	15	1	324292.441	0.056	0.020	0.051	0.31
728	29	13	17	1	28	13	16	0	324661.106	-0.101	0.020	-0.057	0.19
729	29	13	16	1	28	13	15	0	324661.106	-0.102	0.020	-0.057	0.31
730	29	13	17	0	28	13	16	1	324661.106	-0.012	0.020	-0.057	0.31
731	29	13	16	0	28	13	15	1	324661.106	-0.013	0.020	-0.057	0.19
732	29	12	18	0	28	12	17	1	325152.362	0.145	0.020	0.043	0.31
733	29	12	18	1	28	12	17	0	325152.362	-0.024	0.020	0.043	0.19
734	29	12	17	0	28	12	16	1	325152.362	0.110	0.020	0.043	0.19
735	29	12	17	1	28	12	16	0	325152.362	-0.059	0.020	0.043	0.31
736	29	11	19	0	28	11	18	1	325816.685	-0.036	0.030	-0.129	0.62
737	29	11	19	1	28	11	18	0	325816.685	-0.285	0.030	-0.129	0.38
738	29	11	18	0	28	11	17	1	325817.713	0.223	0.030	0.068	0.38
739	29	11	18	1	28	11	17	0	325817.713	-0.025	0.030	0.068	0.62
740	29	10	20	0	28	10	19	1	326736.100	0.032	0.040		
741	29	10	19	1	28	10	18	0	326749.396	-0.046	0.040		
742	29	6	24	0	28	6	23	1	326859.512	0.039	0.050		
743	29	6	24	1	28	6	23	0	326860.170	0.130	0.050		
744	28	5	23	0	27	5	22	1	326969.767	0.036	0.040		

745	28	5	23	1	27	5	22	0	326970.466	0.048	0.040		
746	29	9	21	0	28	9	20	1	328010.480	0.032	0.050		
747	29	9	20	1	28	9	19	0	328177.445	-0.066	0.050		
748	33	2	32	0	32	2	31	1	328836.515	-0.032	0.030	-0.044	0.63
749	33	1	32	0	32	1	31	1	328836.515	-0.065	0.030	-0.044	0.37
750	33	2	32	1	32	2	31	0	328837.288	0.027	0.030	0.006	0.37
751	33	1	32	1	32	1	31	0	328837.288	-0.007	0.030	0.006	0.63
752	34	1	34	0	33	1	33	1	328847.466	-0.033	0.030	-0.033	0.38
753	34	0	34	0	33	0	33	1	328847.466	-0.033	0.030	-0.033	0.62
754	34	1	34	1	33	1	33	0	328848.236	0.020	0.030	0.020	0.62
755	34	0	34	1	33	0	33	0	328848.236	0.020	0.030	0.020	0.38
756	32	2	30	1	31	3	29	1	328890.080	0.009	0.040	-0.002	0.38
757	32	2	30	0	31	3	29	0	328890.080	-0.009	0.040	-0.002	0.62
758	32	3	30	0	31	3	29	1	328895.368	0.305	0.020	0.037	0.37
759	32	3	30	1	31	3	29	0	328895.368	-0.118	0.020	0.037	0.63
760/	32	2	30	0	31	2	29	1	328898.816	0.079	0.020	-0.076	0.63
761	32	2	30	1	31	2	29	0	328898.816	-0.344	0.020	-0.076	0.37
762	32	3	30	1	31	2	29	1	328904.121	-0.013	0.040	-0.020	0.62
763	32	3	30	0	31	2	29	0	328904.121	-0.031	0.040	-0.020	0.38
764	31	3	28	1	30	3	27	0	329226.469	-0.064	0.040		
765	30	5	26	1	29	5	25	0	329233.695	-0.040	0.040		
766	29	8	22	0	28	8	21	1	329504.838	-0.028	0.040		
767	29	7	23	0	28	7	22	1	329944.684	-0.024	0.040		
768	30	4	26	0	29	4	25	1	330958.587	0.036	0.040		
769	29	8	21	1	28	8	20	0	330997.790	-0.009	0.040		
770	28	6	22	0	27	6	21	1	331039.896	0.037	0.030		
771	28	6	22	1	27	6	21	0	331040.597	0.052	0.030		
772	22	4	19	0	21	4	18	1	242448.362	-0.052	0.030		
773	22	4	19	1	21	4	18	0	242449.104	-0.005	0.030		
774	25	1	25	0	24	1	24	1	243206.961	0.075	0.040	0.051	0.63
775	25	0	25	0	24	0	24	1	243206.961	0.008	0.040	0.051	0.37
776	25	1	25	1	24	1	24	0	243207.779	-0.007	0.040	-0.050	0.37
777	25	0	25	1	24	0	24	0	243207.779	-0.074	0.040	-0.050	0.63
778	24	2	23	0	23	2	22	1	243220.250	-0.025	0.040		
779	24	2	23	1	23	2	22	0	243220.900	-0.008	0.040		
780	24	1	23	0	23	1	22	1	243229.934	0.022	0.040		
781	24	1	23	1	23	1	22	0	243230.602	0.058	0.040		
782	23	3	21	0	22	3	20	1	243294.236	0.016	0.030		
783	23	3	21	1	22	3	20	0	243294.941	0.054	0.030		
784	23	2	21	0	22	2	20	1	243615.354	-0.043	0.030		
785	23	2	21	1	22	2	20	0	243616.056	-0.010	0.030		
786	22	19	3	1	21	19	2	0	245146.996	-0.018	0.020	0.016	0.19
787	22	19	4	1	21	19	3	0	245146.996	-0.018	0.020	0.016	0.31
788	22	19	3	0	21	19	2	1	245146.996	0.049	0.020	0.016	0.31
789	22	19	4	0	21	19	3	1	245146.996	0.049	0.020	0.016	0.19
790	22	20	2	0	21	20	1	1	245149.413	0.032	0.020	-0.008	0.31
791	22	20	3	0	21	20	2	1	245149.413	0.032	0.020	-0.008	0.19
792	22	20	2	1	21	20	1	0	245149.413	-0.048	0.020	-0.008	0.19
793	22	20	3	1	21	20	2	0	245149.413	-0.048	0.020	-0.008	0.31
794	22	18	4	1	21	18	3	0	245158.019	-0.035	0.020	0.001	0.19
795	22	18	5	1	21	18	4	0	245158.019	-0.035	0.020	0.001	0.31
796	22	18	4	0	21	18	3	1	245158.019	0.036	0.020	0.001	0.31
797	22	18	5	0	21	18	4	1	245158.019	0.036	0.020	0.001	0.19
798	22	21	1	0	21	21	0	1	245163.355	0.048	0.020	-0.010	0.31
799	22	21	2	0	21	21	1	1	245163.355	0.048	0.020	-0.010	0.19
800	22	21	1	1	21	21	0	0	245163.355	-0.067	0.020	-0.010	0.19
801	22	21	2	1	21	21	1	0	245163.355	-0.067	0.020	-0.010	0.31
802	22	17	5	0	21	17	4	1	245185.108	0.044	0.020	-0.002	0.31
803	22	17	6	0	21	17	5	1	245185.108	0.044	0.020	-0.002	0.19
804	22	17	5	1	21	17	4	0	245185.108	-0.047	0.020	-0.002	0.19
805	22	17	6	1	21	17	5	0	245185.108	-0.047	0.020	-0.002	0.31
806	22	16	6	0	21	16	5	1	245231.670	0.068	0.020	0.006	0.31
807	22	16	7	0	21	16	6	1	245231.670	0.068	0.020	0.006	0.19
808	22	16	6	1	21	16	5	0	245231.670	-0.055	0.020	0.006	0.19
809	22	16	7	1	21	16	6	0	245231.670	-0.055	0.020	0.006	0.31
810	22	15	7	0	21	15	6	1	245302.264	0.064	0.020	-0.019	0.31
811	22	15	8	0	21	15	7	1	245302.264	0.064	0.020	-0.019	0.19
812	22	15	7	1	21	15	6	0	245302.264	-0.101	0.020	-0.019	0.19
813	22	15	8	1	21	15	7	0	245302.264	-0.101	0.020	-0.019	0.31
814	22	14	8	0	21	14	7	1	245403.318	0.116	0.020	0.009	0.31
815	22	14	9	0	21	14	8	1	245403.318	0.116	0.020	0.009	0.19
816	22	14	8	1	21	14	7	0	245403.318	-0.098	0.020	0.009	0.19
817	22	14	9	1	21	14	8	0	245403.318	-0.098	0.020	0.009	0.31
818	22	13	9	0	21	13	8	1	245543.690	0.117	0.020	-0.017	0.31
819	22	13	10	0	21	13	9	1	245543.690	0.117	0.020	-0.017	0.19
820	22	13	9	1	21	13	8	0	245543.690	-0.151	0.020	-0.017	0.19
821	22	13	10	1	21	13	9	0	245543.690	-0.151	0.020	-0.017	0.31
822	22	12	11	0	21	12	10	1	245736.520	0.165	0.020	0.002	0.19
823	22	12	10	0	21	12	9	1	245736.520	0.165	0.020	0.002	0.31
824	22	12	10	1	21	12	9	0	245736.520	-0.161	0.020	0.002	0.19
825	22	12	11	1	21	12	10	0	245736.520	-0.161	0.020	0.002	0.31
826	22	11	12	0	21	11	11	1	246001.414	0.198	0.020	0.005	0.19
827	22	11	11	0	21	11	10	1	246001.414	0.196	0.020	0.005	0.31
828	22	11	12	1	21	11	11	0	246001.414	-0.187	0.020	0.005	0.31
829	22	11	11	1	21	11	10	0	246001.414	-0.189	0.020	0.005	0.19
830	21	5	16	0	20	5	15	1	246129.337	-0.032	0.030		
831	21	5	16	1	20	5	15	0	246130.111	0.000	0.030		
832	22	3	19	0	21	3	18	1	246360.084	0.020	0.020		
833	22	3	19	1	21	3	18	0	246360.829	0.043	0.020		
834	22	10	13	0	21	10	12	1	246369.428	0.262	0.020	0.009	0.19
835	22	10	12	0	21	10	11	1	246369.428	0.200	0.020	0.009	0.31
836	22	10	13	1	21	10	12	0	246369.428	-0.183	0.020	0.009	0.31
837	22	10	12	1	21	10	11	0	246369.428	-0.245	0.020	0.009	0.19
838	21	4	17	0	20	4	16	1	247431.728	-0.029	0.030		
839	21	4	17	1	20	4	16	0	247432.522	-0.006	0.030		
840	22	8	15	1	21	8	14	0	247651.970	-0.029	0.040		
841	22	8	14	0	21	8	13	1	247681.252	0.001	0.040		

842	22	5	18	0	21	5	17	1	248072.567	-0.051	0.030		
843	22	5	18	1	21	5	17	0	248073.308	-0.002	0.030		
844	22	7	16	0	21	7	15	1	248701.077	-0.072	0.040		
845	22	7	16	1	21	7	15	0	248701.780	0.017	0.040		
846	22	7	15	0	21	7	14	1	249091.526	0.013	0.030		
847	22	7	15	1	21	7	14	0	249092.208	0.079	0.030		
848	22	6	17	0	21	6	16	1	249520.618	-0.063	0.030		
849	22	6	17	1	21	6	16	0	249521.333	-0.010	0.030		
850	30	23	7	1	29	23	6	0	334521.081	0.523	0.030	0.038	0.08
851	30	23	8	1	29	23	7	0	334521.081	0.523	0.030	0.038	0.14
852	30	22	8	1	29	22	7	0	334521.081	0.030	0.030	0.038	0.1
853	30	22	9	1	29	22	8	0	334521.081	0.030	0.030	0.038	0.17
854	30	23	7	0	29	23	6	1	334521.081	0.111	0.030	0.038	0.14
855	30	23	8	0	29	23	7	1	334521.081	0.111	0.030	0.038	0.08
856	30	22	8	0	29	22	7	1	334521.081	-0.403	0.030	0.038	0.17
857	30	22	9	0	29	22	8	1	334521.081	-0.403	0.030	0.038	0.1
858	30	24	6	1	29	24	5	0	334536.499	0.218	0.030	0.036	0.19
859	30	24	7	1	29	24	6	0	334536.499	0.218	0.030	0.036	0.31
860	30	24	6	0	29	24	5	1	334536.499	-0.147	0.030	0.036	0.31
861	30	24	7	0	29	24	6	1	334536.499	-0.147	0.030	0.036	0.19
862	30	21	9	1	29	21	8	0	334540.435	0.234	0.030	0.019	0.19
863	30	21	10	1	29	21	9	0	334540.435	0.234	0.030	0.019	0.31
864	30	21	9	0	29	21	8	1	334540.435	-0.196	0.030	0.019	0.31
865	30	21	10	0	29	21	9	1	334540.435	-0.196	0.030	0.019	0.19
866	30	25	5	1	29	25	4	0	334566.365	0.105	0.030	-0.037	0.19
867	30	25	6	1	29	25	5	0	334566.365	0.105	0.030	-0.037	0.31
868	30	25	5	0	29	25	4	1	334566.365	-0.180	0.030	-0.037	0.31
869	30	25	6	0	29	25	5	1	334566.365	-0.180	0.030	-0.037	0.19
870	30	20	10	1	29	20	9	0	334581.291	0.217	0.030	0.013	0.19
871	30	20	11	1	29	20	10	0	334581.291	0.217	0.030	0.013	0.31
872	30	20	10	0	29	20	9	1	334581.291	-0.191	0.030	0.013	0.31
873	30	20	11	0	29	20	10	1	334581.291	-0.191	0.030	0.013	0.19
874	30	26	4	1	29	26	3	0	334609.077	0.179	0.030	0.095	0.19
875	30	26	5	1	29	26	4	0	334609.077	0.179	0.030	0.095	0.31
876	30	26	4	0	29	26	3	1	334609.077	0.011	0.030	0.095	0.31
877	30	26	5	0	29	26	4	1	334609.077	0.011	0.030	0.095	0.19
878	30	19	11	1	29	19	10	0	334647.759	0.183	0.030	-0.001	0.19
879	30	19	12	1	29	19	11	0	334647.759	0.183	0.030	-0.001	0.31
880	30	19	11	0	29	19	10	1	334647.759	-0.185	0.030	-0.001	0.31
881	30	19	12	0	29	19	11	1	334647.759	-0.185	0.030	-0.001	0.19
882	30	18	12	1	29	18	11	0	334744.922	0.170	0.030	0.011	0.19
883	30	18	13	1	29	18	12	0	334744.922	0.170	0.030	0.011	0.31
884	30	18	12	0	29	18	11	1	334744.922	-0.147	0.030	0.011	0.31
885	30	18	13	0	29	18	12	1	334744.922	-0.147	0.030	0.011	0.19
886	30	17	13	1	29	17	12	0	334879.366	0.136	0.030	0.009	0.19
887	30	17	14	1	29	17	13	0	334879.366	0.136	0.030	0.009	0.31
888	30	17	13	0	29	17	12	1	334879.366	-0.118	0.030	0.009	0.31
889	30	17	14	0	29	17	13	1	334879.366	-0.118	0.030	0.009	0.19
890	30	16	14	1	29	16	13	0	335059.964	0.097	0.030	0.005	0.19
891	30	16	15	1	29	16	14	0	335059.964	0.097	0.030	0.005	0.31
892	30	16	14	0	29	16	13	1	335059.964	-0.087	0.030	0.005	0.31
893	30	16	15	0	29	16	14	1	335059.964	-0.087	0.030	0.005	0.19
894	30	15	15	1	29	15	14	0	335298.812	0.045	0.030	-0.008	0.19
895	30	15	16	1	29	15	15	0	335298.812	0.045	0.030	-0.008	0.31
896	30	15	15	0	29	15	14	1	335298.812	-0.062	0.030	-0.008	0.31
897	30	15	16	0	29	15	15	1	335298.812	-0.062	0.030	-0.008	0.19
898	30	14	17	1	29	14	16	0	335612.928	0.038	0.030	0.025	0.31
899	30	14	16	1	29	14	15	0	335612.928	0.038	0.030	0.025	0.19
900	30	14	17	0	29	14	16	1	335612.928	0.011	0.030	0.025	0.19
901	30	14	16	0	29	14	15	1	335612.928	0.011	0.030	0.025	0.31
902	30	13	18	1	29	13	17	0	336026.731	-0.028	0.030	-0.002	0.31
903	30	13	17	1	29	13	16	0	336026.731	-0.031	0.030	-0.002	0.19
904	30	13	18	0	29	13	17	1	336026.731	0.028	0.030	-0.002	0.19
905	30	13	17	0	29	13	16	1	336026.731	0.024	0.030	-0.002	0.31
906	30	11	20	0	29	11	19	1	337322.238	0.157	0.030	0.018	0.38
907	30	11	20	1	29	11	19	0	337322.238	-0.065	0.030	0.018	0.62
908	30	11	19	0	29	11	18	1	337323.723	0.067	0.030	-0.016	0.62
909	30	11	19	1	29	11	18	0	337323.723	-0.154	0.030	-0.016	0.38
910	34	2	33	1	33	2	32	0	338341.124	0.057	0.030	0.049	0.57
911	34	1	33	1	33	1	32	0	338341.124	0.038	0.030	0.049	0.43
912	30	10	21	0	29	10	20	1	338352.853	0.476	0.030	0.007	0.16
913	30	10	21	1	29	10	20	0	338352.853	0.172	0.030	0.007	0.26
914	35	1	35	0	34	1	34	1	338352.853	-0.190	0.030	0.007	0.37
915	35	0	35	0	34	0	34	1	338352.853	-0.190	0.030	0.007	0.22
916	35	1	35	1	34	1	34	0	338353.777	0.053	0.030	0.053	0.37
917	35	0	35	1	34	0	34	0	338353.777	0.053	0.030	0.053	0.63
918	30	10	20	0	29	10	19	1	338376.983	0.066	0.030	-0.048	0.62
919	30	10	20	1	29	10	19	0	338376.983	-0.238	0.030	-0.048	0.38
920	33	3	31	0	32	3	30	1	338391.537	0.112	0.030	-0.039	0.61
921	33	3	31	1	32	3	30	0	338391.537	-0.273	0.030	-0.039	0.39
922	33	2	31	0	32	2	30	1	338393.833	0.249	0.030	0.015	0.39
923	33	2	31	1	32	2	30	0	338393.833	-0.136	0.030	0.015	0.61
924	33	3	31	1	32	2	30	1	338396.873	0.071	0.030	0.056	0.2
925	33	3	31	0	32	2	30	0	338396.873	0.052	0.030	0.056	0.8
926	32	3	29	1	31	4	28	1	338489.101	-0.031	0.030	-0.043	0.38
927	32	3	29	0	31	4	28	0	338489.101	-0.050	0.030	-0.043	0.62
928	32	4	29	0	31	4	28	1	338599.720	0.312	0.030	0.038	0.37
929	32	4	29	1	31	4	28	0	338599.720	-0.126	0.030	0.038	0.63
930	32	3	29	0	31	3	28	1	338669.065	0.118	0.030	-0.047	0.63
931	32	3	29	1	31	3	28	0	338669.065	-0.321	0.030	-0.047	0.37
932	31	5	27	0	30	5	26	1	338841.107	0.105	0.030	-0.080	0.62
933	31	5	27	1	30	5	26	0	338841.107	-0.390	0.030	-0.080	0.38
934	31	4	27	0	30	4	26	1	340028.159	0.365	0.030	0.049	0.38
935	31	4	27	1	30	4	26	0	340028.159	-0.141	0.030	0.049	0.62
936	30	9	21	0	29	9	20	1	340043.495	0.100	0.030	-0.045	0.62
937	30	9	21	1	29	9	20	0	340043.495	-0.287	0.030	-0.045	0.38
938	30	7	24	0	29	7	23	1	341199.096	0.247	0.040	-0.076	0.38

939	30	7	24	1	29	7	23	0	341199.096	-0.270	0.040	-0.076	0.62
940	30	8	23	0	29	8	22	1	341250.302	0.367	0.040	0.080	0.38
941	30	8	23	1	29	8	22	0	341250.302	-0.093	0.040	0.080	0.62
942	31	23	8	1	30	23	7	0	345690.478	0.258	0.030	0.003	0.31
943	31	23	9	1	30	23	8	0	345690.478	0.258	0.030	0.003	0.19
944	31	23	8	0	30	23	7	1	345690.478	-0.252	0.030	0.003	0.19
945	31	23	9	0	30	23	8	1	345690.478	-0.252	0.030	0.003	0.31
946	31	22	9	1	30	22	8	0	345697.784	0.267	0.030	0.006	0.31
947	31	22	10	1	30	22	9	0	345697.784	0.267	0.030	0.006	0.19
948	31	22	9	0	30	22	8	1	345697.784	-0.254	0.030	0.006	0.19
949	31	22	10	0	30	22	9	1	345697.784	-0.254	0.030	0.006	0.31
950	31	24	7	1	30	24	6	0	345700.724	0.195	0.030	-0.042	0.31
951	31	24	8	1	30	24	7	0	345700.724	0.195	0.030	-0.042	0.19
952	31	24	7	0	30	24	6	1	345700.724	-0.278	0.030	-0.042	0.19
953	31	24	8	0	30	24	7	1	345700.724	-0.278	0.030	-0.042	0.31
954	31	21	10	1	30	21	9	0	345725.359	0.247	0.030	-0.008	0.31
955	31	21	11	1	30	21	10	0	345725.359	0.247	0.030	-0.008	0.19
956	31	21	10	0	30	21	9	1	345725.359	-0.263	0.030	-0.008	0.19
957	31	21	11	0	30	21	10	1	345725.359	-0.263	0.030	-0.008	0.31
958	31	20	11	1	30	20	10	0	345776.646	0.254	0.030	0.015	0.31
959	31	20	12	1	30	20	11	0	345776.646	0.254	0.030	0.015	0.19
960	31	20	11	0	30	20	10	1	345776.646	-0.225	0.030	0.015	0.19
961	31	20	12	0	30	20	11	1	345776.646	-0.225	0.030	0.015	0.31
962	31	19	12	1	30	19	11	0	345855.902	0.228	0.030	0.012	0.31
963	31	19	13	1	30	19	12	0	345855.902	0.228	0.030	0.012	0.19
964	31	19	12	0	30	19	11	1	345855.902	-0.205	0.030	0.012	0.19
965	31	19	13	0	30	19	12	1	345855.902	-0.205	0.030	0.012	0.31
966	31	18	13	1	30	18	12	0	345968.741	0.199	0.030	0.011	0.31
967	31	18	14	1	30	18	13	0	345968.741	0.199	0.030	0.011	0.19
968	31	18	13	0	30	18	12	1	345968.741	-0.177	0.030	0.011	0.19
969	31	18	14	0	30	18	13	1	345968.741	-0.177	0.030	0.011	0.31
970	31	17	14	1	30	17	13	0	346122.504	0.165	0.030	0.011	0.31
971	31	17	15	1	30	17	14	0	346122.504	0.165	0.030	0.011	0.19
972	31	17	14	0	30	17	13	1	346122.504	-0.142	0.030	0.011	0.19
973	31	17	15	0	30	17	14	1	346122.504	-0.142	0.030	0.011	0.31
974	31	16	15	1	30	16	14	0	346327.019	0.121	0.030	0.005	0.31
975	31	16	16	1	30	16	15	0	346327.019	0.121	0.030	0.005	0.19
976	31	16	15	0	30	16	14	1	346327.019	-0.111	0.030	0.005	0.19
977	31	16	16	0	30	16	15	1	346327.019	-0.111	0.030	0.005	0.31
978	31	15	16	1	30	15	15	0	346595.757	0.072	0.030	-0.003	0.31
979	31	15	17	1	30	15	16	0	346595.757	0.072	0.030	-0.003	0.19
980	31	15	16	0	30	15	15	1	346595.757	-0.079	0.030	-0.003	0.19
981	31	15	17	0	30	15	16	1	346595.757	-0.079	0.030	-0.003	0.31
982	31	14	18	1	30	14	17	0	346947.657	0.026	0.030	-0.008	0.19
983	31	14	17	1	30	14	16	0	346947.657	0.026	0.030	-0.008	0.31
984	31	14	18	0	30	14	17	1	346947.657	-0.041	0.030	-0.008	0.31
985	31	14	17	0	30	14	16	1	346947.657	-0.041	0.030	-0.008	0.19
986	31	13	19	1	30	13	18	0	347410.231	-0.005	0.030	0.001	0.19
987	31	13	18	1	30	13	17	0	347410.231	-0.012	0.030	0.001	0.31
988	31	13	19	0	30	13	18	1	347410.231	0.015	0.030	0.001	0.31
989	31	13	18	0	30	13	17	1	347410.231	0.007	0.030	0.001	0.19
990	34	3	32	0	33	3	31	1	347886.475	0.180	0.030	-0.046	0.35
991	34	3	32	1	33	3	31	0	347886.475	-0.166	0.030	-0.046	0.65
992	34	2	32	0	33	2	31	1	347887.687	0.130	0.030	0.010	0.65
993	34	2	32	1	33	2	31	0	347887.687	-0.216	0.030	0.010	0.35
994	31	12	20	0	30	12	19	1	348025.134	0.138	0.030	0.000	0.31
995	31	12	20	1	30	12	19	0	348025.134	0.032	0.030	0.000	0.19
996	31	12	19	0	30	12	18	1	348025.134	-0.032	0.030	0.000	0.19
997	31	12	19	1	30	12	18	0	348025.134	-0.138	0.030	0.000	0.31
998	31	11	21	0	30	11	20	1	348857.676	0.030	0.030	-0.042	0.62
999	31	11	21	1	30	11	20	0	348857.676	-0.163	0.030	-0.042	0.38
1000	31	11	20	0	30	11	19	1	348860.951	0.173	0.030	0.052	0.38
1001	31	11	20	1	30	11	19	0	348860.951	-0.020	0.030	0.052	0.62
1002	31	10	22	0	30	10	21	1	350007.483	0.043	0.030	-0.061	0.62
1003	31	10	22	1	30	10	21	0	350007.483	-0.235	0.030	-0.061	0.38
1004	31	10	21	0	30	10	20	1	350052.570	0.215	0.030	0.040	0.38
1005	31	10	21	1	30	10	20	0	350052.570	-0.064	0.030	0.040	0.62
1006	32	5	28	1	31	4	27	1	350695.980	-0.015	0.040	-0.024	0.62
1007	32	5	28	0	31	4	27	0	350695.980	-0.039	0.040	-0.024	0.38
1008	32	23	9	1	31	23	8	0	356861.866	0.291	0.030	-0.014	0.19
1009	32	23	10	1	31	23	9	0	356861.866	0.291	0.030	-0.014	0.31
1010	32	23	9	0	31	23	8	1	356861.866	-0.319	0.030	-0.014	0.31
1011	32	23	10	0	31	23	9	1	356861.866	-0.319	0.030	-0.014	0.19
1012	32	22	10	1	31	22	9	0	356876.646	0.312	0.030	0.007	0.19
1013	32	22	11	1	31	22	10	0	356876.646	0.312	0.030	0.007	0.31
1014	32	22	10	0	31	22	9	1	356876.646	-0.299	0.030	0.007	0.31
1015	32	22	11	0	31	22	10	1	356876.646	-0.299	0.030	0.007	0.19
1016	32	25	7	1	31	25	6	0	356887.106	0.189	0.030	-0.075	0.19
1017	32	25	8	1	31	25	7	0	356887.106	0.189	0.030	-0.075	0.31
1018	32	25	7	0	31	25	6	1	356887.106	-0.338	0.030	-0.075	0.31
1019	32	25	8	0	31	25	7	1	356887.106	-0.338	0.030	-0.075	0.19
1020	32	21	11	1	31	21	10	0	356913.438	0.304	0.030	0.008	0.19
1021	32	21	12	1	31	21	11	0	356913.438	0.304	0.030	0.008	0.31
1022	32	21	11	0	31	21	10	1	356913.438	-0.287	0.030	0.008	0.31
1023	32	21	12	0	31	21	11	1	356913.438	-0.287	0.030	0.008	0.19
1024	32	20	12	1	31	20	11	0	356976.003	0.297	0.030	0.020	0.19
1025	32	20	13	1	31	20	12	0	356976.003	0.297	0.030	0.020	0.31
1026	32	20	12	0	31	20	11	1	356976.003	-0.257	0.030	0.020	0.31
1027	32	20	13	0	31	20	12	1	356976.003	-0.257	0.030	0.020	0.19
1028	32	19	13	1	31	19	12	0	357069.061	0.251	0.030	0.000	0.19
1029	32	19	14	1	31	19	13	0	357069.061	0.251	0.030	0.000	0.31
1030	32	19	13	0	31	19	12	1	357069.061	-0.250	0.030	0.000	0.31
1031	32	19	14	0	31	19	13	1	357069.061	-0.250	0.030	0.000	0.19
1032	32	18	14	1	31	18	13	0	357198.813	0.204	0.030	-0.015	0.19
1033	32	18	15	1	31	18	14	0	357198.813	0.204	0.030	-0.015	0.31
1034	32	18	14	0	31	18	13	1	357198.813	-0.233	0.030	-0.015	0.31
1035	32	18	15	0	31	18	14	1	357198.813	-0.233	0.030	-0.015	0.19

1036	32	17	15	1	31	17	14	0	357373.410	0.192	0.030	0.010	0.19
1037	32	17	16	1	31	17	15	0	357373.410	0.192	0.030	0.010	0.31
1038	32	17	15	0	31	17	14	1	357373.410	-0.171	0.030	0.010	0.31
1039	32	17	16	0	31	17	15	1	357373.410	-0.171	0.030	0.010	0.19
1040	34	3	31	1	33	4	30	1	357516.899	0.017	0.040	0.005	0.39
1041	34	3	31	0	33	4	30	0	357516.899	-0.003	0.040	0.005	0.61
1042	34	4	31	0	33	4	30	1	357557.810	0.239	0.030	0.014	0.37
1043	34	4	31	1	33	4	30	0	357557.810	-0.121	0.030	0.014	0.63
1044	34	4	31	1	33	3	30	1	357625.105	-0.017	0.040	-0.025	0.61
1045	34	4	31	0	33	3	30	0	357625.105	-0.037	0.040	-0.025	0.39
1046	32	15	17	1	31	15	16	0	357904.590	0.101	0.030	0.002	0.19
1047	32	15	18	1	31	15	17	0	357904.590	0.101	0.030	0.002	0.31
1048	32	15	17	0	31	15	16	1	357904.590	-0.096	0.030	0.002	0.31
1049	32	15	18	0	31	15	17	1	357904.590	-0.096	0.030	0.002	0.19
1050	32	13	20	1	31	13	19	0	358812.454	0.002	0.030	-0.016	0.31
1051	32	13	19	1	31	13	18	0	358812.454	-0.015	0.030	-0.016	0.19
1052	32	13	20	0	31	13	19	1	358812.454	-0.016	0.030	-0.016	0.19
1053	32	13	19	0	31	13	18	1	358812.454	-0.033	0.030	-0.016	0.31
1054	32	12	21	0	31	12	20	1	359497.317	0.247	0.030	0.033	0.19
1055	32	12	21	1	31	12	20	0	359497.317	0.174	0.030	0.033	0.31
1056	32	12	20	0	31	12	19	1	359497.317	-0.109	0.030	0.033	0.31
1057	32	12	20	1	31	12	19	0	359497.317	-0.182	0.030	0.033	0.19
1058	32	11	22	0	31	11	21	1	360425.229	0.144	0.030	0.043	0.38
1059	32	11	22	1	31	11	21	0	360425.229	-0.018	0.030	0.043	0.62
1060	32	11	21	0	31	11	20	1	360431.162	0.014	0.030	-0.047	0.62
1061	32	11	21	1	31	11	20	0	360431.162	-0.148	0.030	-0.047	0.38
1062	32	10	23	0	31	10	22	1	361702.298	0.208	0.040	0.051	0.38
1063	32	10	23	1	31	10	22	0	361702.298	-0.043	0.040	0.051	0.62
1064	32	10	22	0	31	10	21	1	361782.211	0.032	0.040	-0.062	0.62
1065	32	10	22	1	31	10	21	0	361782.211	-0.220	0.040	-0.062	0.38
1066	32	9	24	0	31	9	23	1	363340.578	0.274	0.040	0.063	0.38
1067	32	9	24	1	31	9	23	0	363340.578	-0.064	0.040	0.063	0.62
1068	32	9	23	0	31	9	22	1	364119.411	0.074	0.040	-0.055	0.62
1069	32	9	23	1	31	9	22	0	364119.411	-0.270	0.040	-0.055	0.38
1070	36	2	34	1	35	3	33	1	366871.458	0.823	0.040	-0.022	0.06
1071	36	3	34	0	35	3	33	1	366871.458	0.317	0.040	-0.022	0.13
1072	36	3	34	1	35	3	33	0	366871.458	0.058	0.040	-0.022	0.31
1073	36	2	34	0	35	2	33	1	366871.458	-0.102	0.040	-0.022	0.31
1074	36	2	34	1	35	2	33	0	366871.458	-0.360	0.040	-0.022	0.13
1075	36	3	34	0	35	2	33	0	366871.458	-0.866	0.040	-0.022	0.06
1076	35	3	32	1	34	4	31	1	367009.125	-0.005	0.040	-0.012	0.65
1077	35	3	32	0	34	4	31	0	367009.125	-0.026	0.040	-0.012	0.35
1078	35	4	32	0	34	4	31	1	367033.815	0.187	0.030	0.067	0.62
1079	35	4	32	1	34	4	31	0	367033.815	-0.132	0.030	0.067	0.38
1080	35	3	32	0	34	3	31	1	367050.049	0.209	0.030	0.010	0.38
1081	35	3	32	1	34	3	31	0	367050.049	-0.110	0.030	0.010	0.62
1082	34	5	30	0	33	5	29	1	367400.598	0.274	0.030	0.039	0.37
1083	34	5	30	1	33	5	29	0	367400.598	-0.102	0.030	0.039	0.63
1084	33	24	9	1	32	24	8	0	368032.722	0.330	0.030	-0.018	0.31
1085	33	24	10	1	32	24	9	0	368032.722	0.330	0.030	-0.018	0.19
1086	33	24	9	0	32	24	8	1	368032.722	-0.366	0.030	-0.018	0.19
1087	33	24	10	0	32	24	9	1	368032.722	-0.366	0.030	-0.018	0.31
1088	33	23	10	1	32	23	9	0	368034.965	0.314	0.030	-0.043	0.31
1089	33	23	11	1	32	23	10	0	368034.965	0.314	0.030	-0.043	0.19
1090	33	23	10	0	32	23	9	1	368034.965	-0.398	0.030	-0.043	0.19
1091	33	23	11	0	32	23	10	1	368034.965	-0.398	0.030	-0.043	0.31
1092	33	22	11	1	32	22	10	0	368057.893	0.342	0.030	-0.010	0.31
1093	33	22	12	1	32	22	11	0	368057.893	0.342	0.030	-0.010	0.19
1094	33	22	11	0	32	22	10	1	368057.893	-0.362	0.030	-0.010	0.19
1095	33	22	12	0	32	22	11	1	368057.893	-0.362	0.030	-0.010	0.31
1096	33	21	12	1	32	21	11	0	368104.671	0.329	0.030	-0.009	0.31
1097	33	21	13	1	32	21	12	0	368104.671	0.329	0.030	-0.009	0.19
1098	33	21	12	0	32	21	11	1	368104.671	-0.346	0.030	-0.009	0.19
1099	33	21	13	0	32	21	12	1	368104.671	-0.346	0.030	-0.009	0.31
1100	33	20	13	1	32	20	12	0	368179.439	0.316	0.030	0.001	0.31
1101	33	20	14	1	32	20	13	0	368179.439	0.316	0.030	0.001	0.19
1102	33	20	13	0	32	20	12	1	368179.439	-0.313	0.030	0.001	0.19
1103	33	20	14	0	32	20	13	1	368179.439	-0.313	0.030	0.001	0.31
1104	33	19	14	1	32	19	13	0	368287.394	0.266	0.030	-0.018	0.31
1105	33	19	15	1	32	19	14	0	368287.394	0.266	0.030	-0.018	0.19
1106	33	19	14	0	32	19	13	1	368287.394	-0.303	0.030	-0.018	0.19
1107	33	19	15	0	32	19	14	1	368287.394	-0.303	0.030	-0.018	0.31
1108	33	18	15	1	32	18	14	0	368435.378	0.236	0.030	-0.014	0.31
1109	33	18	16	1	32	18	15	0	368435.378	0.236	0.030	-0.014	0.19
1110	33	18	15	0	32	18	14	1	368435.378	-0.263	0.030	-0.014	0.19
1111	33	18	16	0	32	18	15	1	368435.378	-0.263	0.030	-0.014	0.31
1112	33	17	16	1	32	17	15	0	368632.320	0.204	0.030	-0.006	0.31
1113	33	17	17	1	32	17	16	0	368632.320	0.204	0.030	-0.006	0.19
1114	33	17	16	0	32	17	15	1	368632.320	-0.216	0.030	-0.006	0.19
1115	33	17	17	0	32	17	16	1	368632.320	-0.216	0.030	-0.006	0.31
1116	33	16	17	1	32	16	16	0	368890.254	0.168	0.030	0.001	0.31
1117	33	16	18	1	32	16	17	0	368890.254	0.168	0.030	0.001	0.19
1118	33	16	17	0	32	16	16	1	368890.254	-0.166	0.030	0.001	0.19
1119	33	16	18	0	32	16	17	1	368890.254	-0.166	0.030	0.001	0.31
1120	33	15	19	1	32	15	18	0	369225.740	0.118	0.030	-0.004	0.19
1121	33	15	18	1	32	15	17	0	369225.740	0.118	0.030	-0.004	0.31
1122	33	15	19	0	32	15	18	1	369225.740	-0.126	0.030	-0.004	0.31
1123	33	15	18	0	32	15	17	1	369225.740	-0.126	0.030	-0.004	0.19
1124	33	14	20	1	32	14	19	0	369662.278	0.080	0.030	0.004	0.19
1125	33	14	19	1	32	14	18	0	369662.278	0.079	0.030	0.004	0.31
1126	33	14	20	0	32	14	19	1	369662.278	-0.071	0.030	0.004	0.31
1127	33	14	19	0	32	14	18	1	369662.278	-0.072	0.030	0.004	0.19
1128	33	13	21	1	32	13	20	0	370234.316	0.045	0.030	-0.002	0.19
1129	33	13	20	1	32	13	19	0	370234.316	0.008	0.030	-0.002	0.31
1130	33	13	21	0	32	13	20	1	370234.316	-0.012	0.030	-0.002	0.31
1131	33	13	20	0	32	13	19	1	370234.316	-0.049	0.030	-0.002	0.19
1132	34	5	29	1	33	6	28	1	370842.584	0.056	0.050	0.050	0.38

1133	34	5	29	0	33	6	28	0	370842.584	0.046	0.050	0.050	0.62
1134	33	12	22	1	32	12	21	0	370994.585	-0.059	0.040	-0.036	0.38
1135	33	12	22	0	32	12	21	1	370994.585	-0.022	0.040	-0.036	0.62
1136	33	12	21	1	32	12	20	0	370995.403	0.035	0.040	0.048	0.62
1137	33	12	21	0	32	12	20	1	370995.403	0.072	0.040	0.048	0.38
1138	33	5	28	0	32	5	27	1	371045.855	0.346	0.040	0.051	0.38
1139	33	5	28	1	32	5	27	0	371045.855	-0.127	0.040	0.051	0.62
1140	33	11	23	0	32	11	22	1	372026.081	-0.008	0.040	-0.057	0.62
1141	33	11	23	1	32	11	22	0	372026.081	-0.139	0.040	-0.057	0.38
1142	33	11	22	0	32	11	21	1	372037.654	0.133	0.040	0.052	0.38
1143	33	11	22	1	32	11	21	0	372037.654	0.003	0.040	0.052	0.62
1144	33	10	23	0	32	10	22	1	373575.677	0.192	0.040	0.053	0.38
1145	33	10	23	1	32	10	22	0	373575.677	-0.031	0.040	0.053	0.62
1146	26	14	12	1	25	14	11	0	290410.957	0.016	0.020	0.071	0.19
1147	26	14	13	1	25	14	12	0	290410.957	0.016	0.020	0.071	0.31
1148	26	14	12	0	25	14	11	1	290410.957	0.125	0.020	0.071	0.31
1149	26	14	13	0	25	14	12	1	290410.957	0.125	0.020	0.071	0.19
1150	27	24	3	0	26	24	2	1	301050.151	-0.006	0.030	0.022	0.19
1151	27	24	4	0	26	24	3	1	301050.151	-0.006	0.030	0.022	0.31
1152	27	24	3	1	26	24	2	0	301050.151	0.050	0.030	0.022	0.31
1153	27	24	4	1	26	24	3	0	301050.151	0.050	0.030	0.022	0.19