

DETERMINAÇÃO DE POSIÇÕES PRECISAS DE ASTERÓIDES - ESO, LA SILLA, FEVEREIRO 1986

H. DEBHOGNE (*)
L.E. MACHADO (**)
SÍLIO VAZ (**)
E.R. NETTO (**)

(*) Observatoire Royal de Belgique

(**) Observatório do Valongo,
Departamento de Astronomia - UFRJ

Abstract - This paper refers to the observation of asteroids at the European Southern Observatory - ESO, La Silla, Chile, made by H. Debehogne (Observatoire Royal de Belgique), during february/march, 1986. The G.P.O. refractor (D=40 cm; F=4 m), was used. The plates were reduced at the Observatório do Valongo, UFRJ, using the Ascorecord coordinatograph and the Burroughs 6700 computer of the Núcleo de Computação Eletrônica, of the same University.

Resumo - Durante a missão do Observatório Real da Bélgica e do Observatório do Valongo (UFRJ) no Observatório Austral (ESO) em La Silla, Andes chilenos, em fevereiro/março de 1986, o astrônomo H. Debehogne utilizando o telescópio refrator GPO (D=40 cm; F=4m) teve a ocasião de registrar a posição de asteróides já classificados e de outros ainda não identificados. Na redução das observações foi empregado o método "Uccle: Cinco Estrelas" e que opera com as Dependências e os Mínimos Quadrados.

INTRODUÇÃO

As excelentes condições atmosféricas reinantes em La Silla, Andes chilenos, combinada com o emprego de placas fotográficas previamente hipersensibilizadas, permite, com exposições relativamente curtas de 6 a 8 minutos, a obtenção da posição de corpos celestes com brilho superior a magnitude 18. Foram empregadas placas fotográficas Il Ao, Kodak, no formato 16 cm x 16 cm.

Como os asteróides, ainda não classificados, apresentam fraco brilho, magnitudes acima de 16, tem sido possível registrar nas placas fotográficas imagens de asteróides ainda não identificados, como os provisoriamente denominados por 1986 TA,

1986 CRI, 1986 CNI e 1986 CC2, ao lado dos já conhecidos e catalogados na Efeméride Russa dos Asteróides (1986): 709 Fringilla e 1299 Mertona. O total de posições medidas foi de 162. As posições e movimentos próprios das estrelas de referência foram obtidas do Star Atlas e Star Catalogue do Smithsonian Astrophysical Observatory (SAO, 1966), sendo a época 1950.

REDUÇÃO

Após a leitura das posições dos asteróides e das 5 estrelas de referência, previamente identificadas, no Coordenatógrafo Ascorecord, Zeiss-Jena, que permite estimar até 0.1 micron, foi empregado, para a redução computadorizada, o conhecido método

"UCCLE - 5 ESTRELAS" adaptado pelo professor Gilson G. Vieira para utilização nos computadores disponíveis no Observatório do Valongo e no Núcleo de Computação Eletrônica, NCE/UFRJ. Os métodos utilizados na redução são: Dependências e Mínimos Quadrados. O erro médio quadrático (de uma só redução) tem se revelado da ordem de 3,0 micron, nas coordenadas A.R. e Dec., das estrelas de referência. Como as imagens dos asteróides, devido aos efeitos combinados da difração da luz e da difusão na placa fotográfica, acrescido do deslocamento - movimento próprio - dos asteróides durante a exposição, não são absolutamente circulares e homogêneas, a estimativa de precisão, nas coordenadas dos asteróides tem sido $\pm 10,0$ micron. Como a metodologia usada permite um auto controle na posição das estrelas de referência é factível, após re-medições, obter um erro $\pm 10''$ nas coordenadas equatoriais medidas das estrelas que, as compatibiliza com as encontradas nos catálogos (H. Debehogne e L.E. Machado, 1979).

RESULTADOS

A táboa 1 (vide Table 1) fornece as posições, A.R. e Dec. dos asteróides, numeradas de 1 a 162, os resíduos encontrados nas duas coordenadas dos asteróides já classificados os instantes em Tempo Universal (TU) em fração decimal do dia, a data das observações e o número da placa fotográfica do ESO utilizada na observação.

A táboa 2 (vide Table 2), fornece o número das observações, para coerência interna com

a de número 1, as posições das estrelas utilizadas (SAO), para controle, os resíduos (O-C) entre as posições do catálogo e as medidas, e finalmente as Dependências.

As Dependências são explicitamente fornecidas, pois permitem, sem necessidade de novas leituras no Coordenatógrafo, obter posições mais adequadas, caso observações ulteriores venham a indicar posições e movimentos próprios estelares mais precisos. Os danos que venham a sofrer as placas, já medidas e arquivadas, não terão a menor influência, se as dependências forem calculadas e conhecidas, junto com as posições dos asteróides e das estrelas de referência.

Agradecimentos - Ao ESO pelas passagens aéreas Bruxelas-Santiago-La Silla, Santiago-Rio-Bruxelas, estada do Dr. H. Debehogne no Chile e pelas placas fotográficas. A Fundação Universitária José Bonifácio pelo auxílio concedido ao Observatório do Valongo e que possibilitou o presente trabalho, em sua fase no Rio de Janeiro.

REFERENCIAS

- EPHEMERIDI MALIK PLANET (1986) - ITA (Leningrado, URSS).
DEBEHOGNE, H. & MACHADO, L.E. (1979) - *Astron. and Astrophys. Sup. Ser.*, 36, 313.
SMITHSONIAN ASTROPHYSICAL OBSERVATORY (1966) - SAO Star Catalogue Washington, D.C. - Smithsonian Institution.

TABLE 1 - POSITIONS

DATE UT 1986

Nº	OBJECT		PLATE MON.		DAY	ALPHA 1950			DELTA 1950			RESIDUALS	
						H	M	S	O	'	''	M	'
1	709	FRINGILLA	2240	2	3.202083	10	47	27.509	+03	37	10.19	+2	-1
2	709	FRINGILLA	2240	2	3.207639	10	47	27.277	+03	37	10.09	+2	-1
3	709	FRINGILLA	2240	2	3.213914	10	47	27.033	+03	37	10.04	+2	-1
4	709	FRINGILLA	9246	2	4.163194	10	46	45.544	+03	36	56.76	+2	-1
5	709	FRINGILLA	9246	2	4.167361	10	46	45.356	+03	36	56.53	+2	-1
6	709	FRINGILLA	9246	2	4.171527	9	46	45.170	+03	36	56.50	+2	-1
7	709	FRINGILLA	9257	2	5.162847	10	46	0.866	+03	36	47.42	+2	-1
8	709	FRINGILLA	9257	2	5.167261	10	46	0.666	+03	36	47.33	+2	-1
9	709	FRINGILLA	9257	2	5.171875	10	46	0.489	+03	36	47.28	+2	-1
10	709	FRINGILLA	9267	2	6.245486	10	45	11.336	+03	36	44.79	+2	-1
11	709	FRINGILLA	9267	2	6.250347	10	45	11.116	+03	36	44.53	+2	-1
12	709	FRINGILLA	9267	2	6.255208	10	45	10.903	+03	36	44.23	+2	-1
13	709	FRINGILLA	9277	2	7.284028	10	44	22.903	+03	36	48.67	+2	-1
14	709	FRINGILLA	9277	2	7.289583	10	44	22.657	+03	36	48.60	+1	-1
15	709	FRINGILLA	9277	2	7.295139	10	44	22.412	+03	36	48.50	+1	-1
16	709	FRINGILLA	2285	2	8.351041	10	43	32.134	+03	36	58.16	+1	-0
17	709	FRINGILLA	2285	2	8.355903	10	43	31.921	+03	36	57.92	+1	-0
18	709	FRINGILLA	2285	2	8.361111	10	43	31.689	+03	36	57.71	+1	-0
19	709	FRINGILLA	2291	2	9.212847	10	42	50.753	03	37	10.00	+0	-0
20	709	FRINGILLA	2291	2	9.217708	10	42	50.519	+03	37	10.20	+0	-0
21	709	FRINGILLA	2291	2	9.224653	10	42	50.137	+03	37	10.56	+0	-0
22	709	FRINGILLA	9303	2	10.295486	10	41	57.555	+03	37	30.90	+1	-0
23	709	FRINGILLA	9303	2	10.300347	10	41	57.321	+03	37	31.03	+1	-0
24	709	FRINGILLA	9303	2	10.305208	10	41	57.070	+03	37	31.50	+1	-0
25	709	FRINGILLA	9325	2	12.319791	10	40	16.055	+03	38	25.81	+1	-1
26	709	FRINGILLA	9325	2	12.324653	10	40	15.796	+03	38	26.01	+1	-1

27	709	FRINGILLA	9325	2	12.329514	10	40	15.553	+03	38	26.18	+1	-1
28	709	FRINGILLA	9337	2	13.307292	10	39	25.624	+03	39	59.75	+1	-1
29	709	FRINGILLA	9337	2	13.312152	10	39	25.394	+03	39	00.07	+1	-1
30	709	FRINGILLA	9337	2	13.317014	10	39	25.125	+03	39	00.24	+1	-1
31	709	FRINGILLA	9347	2	14.284028	10	38	35.161	+03	39	35.90	+1	-1
32	709	FRINGILLA	9347	2	14.288194	10	38	34.712	+03	39	36.08	+1	-1
33	709	FRINGILLA	9347	2	14.292361	10	38	34.712	+03	39	36.22	+1	-1
34	709	FRINGILLA	2348	2	14.327777	10	38	32.813	+03	39	37.61	+1	-1
35	709	FRINGILLA	2348	2	14.331944	10	38	32.597	+03	39	37.78	+1	-1
36	709	FRINGILLA	2348	2	14.336111	10	38	32.400	+03	39	38.03	+1	-1
37	709	FRINGILLA	9357	2	15.300694	10	37	42.030	+03	40	20.09	+1	-1
38	709	FRINGILLA	9357	2	15.304861	10	37	41.784	+03	40	20.29	+1	-1
39	709	FRINGILLA	9347	2	15.309028	10	37	41.566	+03	40	20.35	+1	-1
40	709	FRINGILLA	9369	2	16.354167	10	36	46.380	+03	41	11.69	+1	-1
41	709	FRINGILLA	9369	2	16.358333	10	36	46.175	+03	41	11.87	+1	-1
42	709	FRINGILLA	9369	2	16.362500	10	36	45.969	+03	41	12.16	+1	-1
43	709	FRINGILLA	9382	2	17.335069	10	35	54.239	+03	42	02.21	+1	-1
44	709	FRINGILLA	9382	2	17.339931	10	35	54.007	+03	42	02.56	+1	-1
45	709	FRINGILLA	9382	2	17.344791	10	35	53.719	+03	42	02.73	+1	-1
46	709	FRINGILLA	2439	2	5069	10	33	12.415	+03	44	59.84	+0	-1
47	709	FRINGILLA	2439	2	20.335069	1*	33	12.415	+03	44	59.84	+0	-1
48	709	FRINGILLA	2439	2	20.339931	10	33	12.130	+03	44	59.87	+0	-1
49	1299	MERTONA	2240	2	3.202083	10	49	16.557	+04	28	48.37	+3	-2
50	1299	MERTONA	2240	2	3.213194	10	49	16.181	+04	28	52.25	+3	-2
52	1299	MERTONA	9246	2	4.163194	10	48	42.326	+04	34	35.57	+3	-2
53	1299	MERTONA	9246	2	4.167361	10	48	42.326	+04	34	35.57	+3	-2
54	1299	MERTONA	9246	2	4.171527	10	48	42.183	+04	34	37.56	+3	-2
55	1299	MERTONA	9257	2	5.162847	10	48	5.903	+04	40	42.80	+2	-2
56	1299	MERTONA	9257	2	5.167361	10	48	5.736	+04	40	44.56	+2	-2
57	1299	MERTONA	9257	2	5.171875	10	48	5.556	+04	40	46.23	+2	-2
58	1299	MERTONA	9267	2	6.245486	10	47	24.806	+04	47	33.36	+2	-2
59	1299	MERTONA	9267	2	6.250347	10	47	24.635	+04	47	34.87	+2	-2

60	1299	MERTONA	9267	2	6.255208	10	47	24.474	+04	47	36.35	+2	-2
61	1299	MERTONA	9277	2	7.284028	10	46	44.370	+04	54	15.37	+1	-1
62	1299	MERTONA	9277	2	7.289583	10	46	44.175	+04	54	17.36	+1	-1
63	1299	MERTONA	9277	2	7.295139	10	46	43.979	+04	54	19.76	+1	-1
64	1299	MERTONA	2285	2	8.351041	10	46	1.611	+05	01	18.08	+0	-1
65	1299	MERTONA	2285	2	8.355903	10	46	1.445	+05	01	19.94	+0	-1
66	1299	MERTONA	2285	2	8.361111	10	46	1.259	+05	01	21.84	+0	-1
67	1299	MERTONA	2291	2	9.212857	10	45	26.653	+05	07	04.93	+0	0
68	1299	MERTONA	2291	2	9.217708	10	45	26.439	+05	07	07.06	+0	0
69	1299	MERTONA	2291	2	9.224653	10	45	26.126	+05	07	09.86	+0	0
70	2313	1976TA	9267	2	6.245486	10	46	32.043	+04	58	38.40	+2	-1
71	2313	1976 TA	9267	2	6.250347	10	46	31.838	+04	58	39.53	+2	-1
72	2313	1976 TA	9267	2	6.255208	10	46	31.638	+04	58	40.61	+2	-1
73		1986CR1	9257	2	5.162847	10	45	46.555	+03	44	40.36		
74		1986CR1	9257	2	5.167361	20	45	46.361	+03	44	41.29		
75		1986CR1	9257	2	5.171875	10	45	46.161	+03	44	42.27		
76		1986CR1	9267	2	6.245486	10	44	59.053	+03	48	22.16		
77		1986CR1	9267	2	6.250347	10	44	58.846	+03	48	23.23		
78		1986CR1	9267	2	6.255208	10	44	58.645	+03	48	24.22		
79		1986CR1	9277	2	7.284028	10	44	11.746	+03	52	07.62		
80		1986CR1	9277	2	7.289583	10	44	11.504	+03	52	08.83		
81		1986CR1	9277	2	7.295139	10	44	11.270	+03	52	10.03		
82		1986CR1	9303	2	10.295486	10	41	46.120	+04	04	12.90		
83		1986CR1	9303	2	10.300347	10	41	45.902	+04	04	14.03		
84		1986CR1	9303	2	10.305208	10	41	45.653	+04	04	15.14		
85		1986CR1	9325	2	12.319791	10	40	1.222	+04	13	15.46		
86		1986CR1	9325	2	12.324653	10	40	0.960	+04	13	16.63		
87		1986CR1	9325	2	12.329514	10	40	0.700	+04	13	17.91		
88		1986CR1	9337	2	13.307292	10	39	8.263	+04	17	55.81		
89		1986CR1	9337	2	13.312152	10	9	8.018	+04	17	57.06		
90		1986CR1	9337	2	13.217014	10	39	7.752	+04	17	58.58		
91		1986CR1	9347	2	14.284028	10	38	14.866	+4	22	41.48		

92		1986CR1	9347	2	14.288194	10	38	14.638	+04	22	42.75		
93		1986CR1	9347	2	14.292361	10	38	14.409	+04	22	44.00		
94		1986CR1	2348	2	14.327777	10	38	12.353	+04	22	55.00		
95		1986CR1	2348	2	14.331944	10	38	12.124	+04	22	56.18		
96		1986CR1	2348	2	14.336111	10	38	11.891	+04	22	57.42		
97		1986CR1	9357	2	15.300694	10	37	18.098	+04	27	48.94		
98		1986CR1	9357	2	15.304861	10	37	17.867	+04	27	50.31		
99		1986CR1	9357	2	15.309028	10	37	17.628	+04	27	51.69		
100		1986CR1	9382	2	17.335069	10	35	21.551	+04	38	29.74		
101		1986CR1	9382	2	17.339931	10	35	21.273	+04	38	31.29		
102		1986CR1	9382	2	17.344791	10	35	20.994	+04	38	32.84		
103		1986CN1	2240	2	3.202083	10	46	56.326	+04	15	45.84		
104		1986CN1	2240	2	3.207639	10	46	56.076	+04	15	44.73		
105		1986CN1	2240	2	3.213194	10	46	55.824	+04	15	43.56		
106		1986CN1	9246	2	4.163194	10	46	13.585	+04	12	40.00		
107		1986CN1	9246	2	4.167361	10	46	13.398	+04	12	39.16		
108		1986CN1	9246	2	4.171527	10	46	13.206	+04	12	38.33		
109		1986CN1	9257	2	5.162847	10	45	27.280	+04	09	37.19		
110		1986CN1	9757	2	5.167361	10	45	27.072	+04	09	36.49		
111		1986CN1	9257	2	5.171875	10	45	26.862	+04	09	35.72		
112		1986CN1	9267	2	6.245486	10	44	35.000	+04	06	27.58		
113		1986CN1	9267	2	6.250347	10	44	34.759	+04	06	26.74		
114		1986CN1	9267	2	6.255208	10	44	34.524	+04	06	26.00		
115		1986CN1	9277	2	7.284028	10	43	42.960	+04	03	34.08		
116		1986CN1	9277	2	7.289583	10	43	42.673	+04	03	33.05		
117		1986CN	9277	2	7.295139	10	43	42.385	+04	03	32.14		
118		1986CN1	2285	2	8.351041	10	42	47.743	+04	00	44.28		
119		1986CN1	2285	2	8.355903	10	42	47.478	+04	00	43.60		
120		1986CN1	2285	2	8.361111	10	42	47.199	+04	00	42.84		
121		1986CN1	2291	2	9.212847	10	42	2.082	+03	58	34.09		
122		1986CN1	2291	2	9.217708	10	42	1.826	+03	58	33.23		
123		1986CN1	2291	2	9.2244653	10	42	1.458	+03	58	32.08		

124		1986CN1	9303	2	10.295486	10	41	2.723	+03	55	58.30		
125		1986CN1	9303	2	10.300347	10	41	2.450	+03	55	57.54		
126		1986CN1	9303	2	10.305208	10	41	2.162	+03	55	56.73		
127		1986CN1	9325	2	12.219791	10	39	7.370	+03	51	29.00		
128		1986CN1	9325	2	12.324653	10	39	7.093	+03	51	28.46		
129		1986CN1	9325	2	12.329514	10	39	6.830	+03	51	28.00		
130		1986CN1	9337	2	13.307292	10	38	9.242	+03	49	28.69		
131		1986CN1	9337	2	13.312152	10	38	8.956	+03	49	28.07		
132		1986CN1	9337	2	13.317014	10	38	8.665	+03	49	27.43		
133		1986CN1	9347	2	14.284028	10	37	10.484	+03	47	35.39		
134		1986CN1	9347	2	14.288194	10	37	10.235	+03	47	35.00		
135		1986CN1	9347	2	14.292361	10	37	9.984	+03	47	34.59		
136		1986CN1	2348	2	14.327777	10	37	7.733	+03	47	30.03		
137		1986CN1	2348	2	14.331944	10	37	7.490	+03	47	29.73		
138		1986CN1	2348	2	14.336111	10	37	7.248	+03	47	29.18		
139		1986CN1	9357	2	15.300694	10	36	8.101	+03	45	44.69		
140		1986CN1	9357	2	15.304861	10	36	7.840	+03	45	44.28		
141		1986CN1	9357	2	15.309028	10	36	7.577	+03	45	43.83		
142		1986CN1	9369	2	16.354167	10	35	2.275	+03	43	58.60		
143		1986CN1	9369	2	16.358333	10	35	2.015	+03	43	58.00		
144		1986CN1	9369	2	16.362500	10	35	1.775	+03	43	57.35		
145		1986CN1	9382	2	17.335069	10	34	0.018	+03	42	25.08		
146		1986CN1	9382	2	17.339931	10	33	59.717	+03	42	24.63		
147		1986CN1	9382	2	17.344791	10	33	59.394	+03	42	24.30		
148		1986CN1	2439	2	20.330208	10	30	44.977	+03	38	18.20		
149		1986CN1	2439	2	20.335069	10	30	44.556	+03	38	17.78		
150		1986CN1	2439	2	20.339931	10	30	44.238	+03	38	17.43		
151		1986CC2	9325	2	12.319791	10	40	26.485	+03	45	04.77		
152		1986CC2	9325	2	12.324653	10	40	26.147	+03	45	05.53		
153		1986CC2	9325	2	12.329514	10	40	25.897	+03	45	06.23		
154		1986CC2	9337	2	13.307292	10	39	27.959	+03	47	38.74		
155		1986CC2	9337	2	13.312152	10	39	27.649	+03	47	39.43		

156		1986CC2	9337	2	13.317014	10	39	27.363	+03	47	40.19		
157		1986CC2	9347	2	14.284028	10	38	29.424	+03	50	15.30		
158		1986CC2	9347	2	14.288194	10	38	29.177	+03	50	16.03		
159		1986CC2	9347	2	14.292361	10	38	28.929	+03	50	16.76		
160		1986CC2	9357	2	15.300694	10	37	27.920	+03	53	05.08		
161		1986CC2	9357	2	15.304861	10	37	27.668	+03	53	05.79		
162		1986CC2	9357	2	15.309028	10	37	27.413	+03	53	06.48		

TABLE 2

STAR RESIDUALS DEPENDENCES

OBSERVATIONS			N° S A O	POSITIONS USED		STAR RESIDUALS						DEPENDENCES		
				S	"	S	"	S	"	S	"			
1	2	3	118510	+07.170	49.21	+0.014	-0.04	+0.019	+0.24	+0.013	+0.20	+0.221666	+0.222360	+0.223201
			118518	+48.442	17.44	+0.010	-0.06	-0.012	-0.34	-0.008	-0.30	+0.548210	+0.548884	+0.549481
			118542	+58.952	18.13	-0.010	+0.21	-0.014	+0.22	-0.011	+0.22	+0.400608	+0.400211	+0.399824
			118551	+40.470	54.23	+0.022	-0.18	+0.030	+0.13	+0.022	+0.09	+0.046238	+0.045397	+0.044539
			118524	+43.987	48.06	-0.017	+0.06	-0.022	-0.25	-0.015	-0.21	-0.216722	-0.216852	-0.217045
4	5	6	185518	+48.442	17.44	-0.004	-0.01	-0.004	+0.00	-0.000	+0.16	+0.708564	+0.708984	+0.709397
			118530	+21.962	21.58	-0.016	-0.13	-0.009	-0.18	-0.002	-0.38	+0.336697	+0.336482	+0.336147
			118551	+40.470	54.23	+0.034	+0.20	+0.025	+0.25	+0.003	+0.29	-0.025574	-0.026337	-0.027035
			118524	+43.987	48.06	-0.039	-0.14	-0.035	-0.11	-0.001	-0.03	-0.318369	-0.318512	-0.318605
			118510	+07.170	49.21	+0.025	+0.07	+0.024	+0.04	+0.001	+0.07	+0.298682	+0.299383	+0.300096
7	8	9	118510	+07.170	49.21	-0.004	+0.17	-0.010	+0.11	+0.004	-0.13	+0.259759	+0.259571	+0.259445
			118518	+48.442	17.44	+0.004	-0.13	+0.008	-0.11	-0.011	+0.14	+0.731425	+0.731206	+0.730978
			118524	+43.987	48.06	-0.006	+0.27	-0.016	+0.17	-0.005	-0.17	-0.032231	-0.032655	-0.033027
			118489	+06.233	52.35	+0.001	-0.16	+0.008	-0.04	+0.046	-0.21	-0.281763	-0.281486	-0.281261
			118474	+38.282	35.33	+0.005	-0.14	+0.010	-0.13	-0.035	+0.37	+0.322810	+0.323365	+0.323865
10	11	12	118510	+07.170	49.21	-0.028	+0.16	-0.024	+0.13	+0.014	-0.19	+0.002660	+0.002392	+0.002096
			118514	+30.156	48.87	+0.031	-0.19	+0.031	-0.13	-0.045	+0.55	+0.193203	+0.192888	+0.192554
			118474	+38.282	35.33	+0.018	-0.07	+0.008	-0.10	+0.018	-0.18	+0.109132	+0.109873	+0.110608
			118518	+48.442	17.44	-0.048	+0.24	-0.034	+0.24	+0.032	-0.31	+0.258314	+0.257816	+0.257397
			118490	+16.945	45.27	+0.027	-0.13	+0.018	-0.13	-0.020	+0.12	+0.436692	+0.437031	+0.437345
13	14	15	118474	+38.282	35.33	-0.023	+0.17	-0.016	+0.37	-0.021	+0.12	+0.199648	+0.200018	+0.200474
			118463	+58.105	47.47	+0.002	-0.01	+0.003	-0.30	-0.001	-0.23	+0.024857	+0.025393	+0.025841
			118510	+07.170	49.21	+0.038	-0.29	+0.025	-0.29	-0.012	+0.56	-0.000838	-0.001455	-0.002014
			118490	+16.945	45.27	+0.020	-0.15	+0.013	-0.23	-0.025	-0.44	+0.557184	+0.557400	+0.557627
			118514	+30.156	48.87	-0.036	+0.28	-0.025	+0.45	+0.059	-0.01	+0.219149	+0.218646	+0.218072

16	17	18	118510	+07.170	49.21	-0.007	-0.07	-0.016	-0.17	-0.016	-0.17	+0.191910	+0.191085	+0.190175
			118474	+38.282	35.33	-0.013	-0.20	-0.011	-0.16	-0.011	-0.16	+0.311575	+0.311649	+0.311852
			118463	+58.105	47.47	+0.018	+0.26	+0.020	+0.27	+0.020	+0.27	+0.005965	+0.006118	+0.006269
			118454	+59.506	46.44	-0.010	-0.10	-0.024	-0.26	-0.024	-0.26	-0.222945	-0.222619	-0.222284
			118471	+27.122	11.12	+0.011	+0.10	+0.031	+0.33	+0.031	+0.33	+0.713494	+0.713766	+0.713987
19	20	21	118510	+07.170	49.21	-0.004	+0.19	-0.004	+0.13	-0.005	+0.18	+0.081161	+0.080275	+0.078856
			118470	+24.531	02.79	-0.023	-0.12	-0.020	+0.04	-0.018	-0.16	-0.133047	-0.133906	-0.132785
			118454	+59.506	46.44	+0.033	-0.13	+0.030	-0.24	+0.027	-0.07	-0.016547	-0.016085	-0.015264
			118474	+38.282	35.33	-0.030	+0.76	-0.029	+0.59	-0.030	+0.70	+0.357858	+0.357937	+0.358123
			118471	+27.122	11.12	+0.024	-0.69	+0.024	-0.53	+0.026	-0.65	+0.710574	+0.710778	+0.711070
22	23	24	118463	+58.105	47.47	+0.004	-0.08	+0.013	-0.04	+0.009	-0.05	-0.012222	-0.012209	-0.012351
			118474	+38.282	35.33	-0.004	+0.01	-0.012	-0.20	-0.020	-0.13	+0.191117	+0.190752	+0.190375
			118471	+27.122	11.12	-0.001	+0.11	+0.011	+0.57	+0.038	+0.42	+0.408990	+0.408560	+0.408076
			118457	+22.936	18.96	+0.007	-0.30	-0.039	+0.42	-0.013	+0.38	+0.380989	+0.380901	+0.380870
			118429	+22.330	31.59	-0.006	+0.27	+0.026	-0.75	-0.015	-0.61	+0.031025	+0.031996	+0.033031
25	26	27	118454	+59.506	46.44	-0.015	+0.30	+0.000	-0.05	-0.000	-0.04	+0.087830	+0.087101	+0.086414
			118457	+22.936	18.96	+0.017	-0.41	-0.003	-0.15	-0.002	-0.18	+0.481474	+0.480452	+0.479492
			118435	+12.572	26.10	-0.006	-0.21	+0.005	-0.26	+0.004	+0.32	+0.299849	+0.300240	+0.300613
			118429	+22.330	31.59	-0.001	+0.73	-0.001	+0.14	+0.001	+0.12	+0.172859	+0.173800	+0.174682
			118434	+12.426	29.68	+0.005	-0.41	-0.001	-0.21	-0.002	-0.22	-0.042012	-0.041593	-0.041201
28	29	30	118457	+22.936	18.96	+0.008	-0.01	+0.005	+0.01	-0.038	-0.01	+0.294695	+0.293612	+0.292351
			118435	+12.572	26.10	-0.008	+0.14	-0.002	+0.10	+0.014	-0.07	+0.361484	+0.361854	+0.362307
			118429	+22.330	31.59	-0.004	-0.41	-0.004	-0.07	-0.014	+0.27	+0.312505	+0.313241	+0.314148
			118426	+50.486	35.18	+0.042	+0.45	+0.003	+0.03	-0.016	-0.62	+0.118115	+0.118748	+0.119465
			118434	+12.426	29.68	-0.038	-0.17	-0.002	-0.07	+0.053	+0.44	-0.086799	-0.087454	-0.088272
31	32	33	118424	+42.737	51.69	-0.032	-0.35	+0.025	+0.31	+0.009	-0.20	-0.046117	-0.045802	-0.045478
			118434	+12.426	29.68	+0.003	+0.03	-0.021	-0.32	-0.013	+0.13	-0.063045	-0.063738	-0.064444
			118435	+12.572	26.10	+0.003	+0.03	+0.018	+0.43	+0.017	+0.13	+0.587440	+0.586757	+0.586089
			118429	+22.330	31.59	-0.019	-0.20	-0.007	-0.32	-0.008	-0.36	+0.393964	+0.393837	+0.393703
			118413	+22.103	29.51	+0.045	+0.48	-0.014	-0.11	-0.005	+0.30	+0.127758	+0.128946	+0.130131
34	35	36	118424	+42.737	51.69	-0.002	-0.08	+0.017	-0.08	-0.006	+0.11	+0.015571	+0.015481	+0.015461
			118434	+12.426	29.68	-0.023	+0.09	-0.029	+0.08	-0.004	-0.06	-0.054782	-0.055411	-0.056021

			118435	+12.572	26.10	+0.044	+0.02	+0.012	+0.02	+0.017	-0.03	+0.804515	+0.804035	+0.289376
			118408	+51.832	06.87	+0.019	+0.23	-0.042	+0.21	+0.021	-0.29	-0.053768	-0.053116	-0.052435
37	38	39	118425	+44.984	04.82	-0.012	-0.03	-0.024	-0.06	-0.019	-0.16	-0.179692	-0.179764	-0.179896
			118434	+12.426	29.68	+0.016	-0.02	+0.019	+0.09	+0.025	+0.10	-0.041757	-0.042459	-0.043048
			118435	+12.572	26.10	-0.031	+0.09	-0.028	-0.18	-0.027	-0.12	+0.629488	+0.628914	+0.628403
			118413	+22.103	29.51	+0.027	-0.10	+0.019	+0.17	+0.029	-0.08	+0.413094	+0.413695	+0.414259
			118408	+51.832	06.87	-0.000	+0.07	+0.013	-0.01	-0.009	+0.27	+0.178866	+0.179614	+0.180282
40	41	42	118388	+26.536	23.16	+0.009	+0.09	+0.013	+0.14	+0.017	+0.15	+0.246044	+0.246272	+0.246482
			118395	+05.679	33.50	-0.014	-0.17	-0.026	-0.28	-0.034	-0.29	-0.063055	-0.062530	-0.061969
			118408	+51.832	06.87	+0.004	+0.10	+0.018	+0.18	+0.025	+0.19	+0.073577	+0.073689	+0.073818
			118413	+22.103	29.51	+0.022	+0.13	+0.009	+0.13	+0.008	+0.13	+0.234765	+0.234646	+0.234484
			118429	+22.330	31.59	-0.021	-0.14	-0.014	-0.17	-0.016	-0.18	+0.508669	+0.507923	+0.507185
43	44	45	500001	+41.002	41.08	+0.002	+0.14	+0.005	+0.11	+0.004	+0.13	+0.444340	+0.444703	+0.445210
			118395	+05.679	33.50	+0.003	-0.24	-0.003	-0.17	-0.004	-0.22	+0.015272	+0.015800	+0.016464
			118408	+51.832	06.87	-0.018	+0.17	-0.015	+0.03	-0.004	+0.11	-0.028033	-0.027933	-0.027903
			118413	+22.103	29.51	+0.028	+0.21	+0.035	+0.31	+0.016	+0.26	+0.194250	+0.194081	+0.193832
			118429	+22.330	31.59	-0.015	-0.27	-0.022	-0.29	-0.012	-0.29	+0.374172	+0.373349	+0.372397
46	47	48	118374	+51.656	20.15	-0.020	-0.04	-0.027	-0.02	+0.020	-0.10	+0.641428	+0.641648	+0.642097
			118371	+42.844	11.38	+0.020	+0.04	+0.028	+0.02	-0.020	+0.10	+0.047275	+0.047653	+0.048203
			118361	+14.198	56.45	+0.004	-0.02	+0.004	+0.06	+0.006	+0.02	-0.107776	-0.106869	-0.105932
			118379	+20.271	43.26	-0.010	+0.02	-0.012	-0.08	-0.011	-0.20	-0.201666	-0.201712	-0.201849
			118395	+05.679	33.50	+0.005	+0.00	+0.007	+0.02	+0.005	+0.18	+0.620740	+0.619280	+0.617481
49	50	51	118510	+07.170	49.21	+0.014	-0.04	+0.019	+0.24	+0.013	+0.20	-0.011933	-0.011134	-0.010574
			118518	+48.442	17.44	-0.010	-0.06	-0.012	-0.34	-0.008	-0.30	-0.327068	-0.326970	-0.326852
			118542	+58.952	18.13	-0.010	+0.21	-0.014	+0.22	-0.011	+0.22	+0.080785	+0.080202	+0.079569
			118551	+40.470	54.23	+0.022	-0.18	+0.030	+0.13	+0.022	+0.09	+0.576290	+0.575640	+0.575081
			118524	+43.987	48.06	-0.017	+0.06	-0.022	-0.25	-0.016	-0.21	+0.681925	+0.682263	+0.682776
52	53	54	118518	+48.442	17.44	0.004	-0.01	-0.005	-0.00	+0.005	-0.22	-0.343262	-0.343201	-0.343347
			118530	+21.962	21.58	-0.016	-0.13	-0.001	-0.17	-0.003	-0.25	+0.041771	+0.041351	+0.041017
			118551	+40.470	54.23	+0.034	+0.20	+0.015	+0.26	+0.002	+0.46	+0.419818	+0.419030	+0.418303
			118524	+43.987	48.06	-0.039	-0.14	-0.036	-0.15	+0.005	-0.36	+0.767070	+0.767568	+0.768213
			118510	+07.170	49.21	+0.025	+0.07	+0.027	+0.06	-0.005	+0.37	+0.114603	+0.115253	+0.115813

55	56	57	118510	+07.170	49.21	-0.004	+0.17	-0.010	+0.11	-0.014	+0.37	+0.269798	+0.269676	+0.269515
			118518	+48.442	17.44	+0.004	-0.13	+0.008	-0.11	+0.010	-0.57	+0.066365	+0.065751	+0.065130
			118524	+43.987	48.06	-0.006	+0.27	-0.016	+0.17	+0.005	+0.37	+0.748910	+0.748786	+0.748661
			118489	+06.233	52.35	+0.001	-0.16	+0.008	-0.04	+0.025	-0.27	+0.291466	+0.292032	+0.292573
			118474	+38.282	35.33	+0.005	-0.14	+0.010	-0.13	-0.025	+0.10	-0.376539	-0.376245	-0.375879
58	59	60	118510	+07.170	49.21	+0.010	-0.26	+0.016	+0.19	-0.023	+0.26	+0.220339	+0.220185	+0.220023
			118514	+30.156	48.87	-0.016	+0.26	+0.016	-0.40	+0.023	-0.39	+0.035719	+0.035223	+0.034775
			118474	+38.282	35.33	+0.005	-0.42	-0.018	+0.28	+0.020	-0.02	-0.320300	-0.319976	-0.319692
			118488	+57.864	34.61	+0.050	-0.20	+0.037	-0.17	-0.045	+0.30	+0.412280	+0.412823	+0.413366
			118524	+43.987	48.06	-0.049	+0.62	-0.052	+0.10	+0.025	-0.15	+0.651963	+0.651744	+0.651527
61	62	63	118474	+38.282	35.33	-0.011	+0.27	-0.011	+0.21	-0.011	+0.26	-0.427252	-0.427489	-0.427749
			118463	+58.105	47.47	+0.025	-0.59	+0.026	-0.46	+0.027	-0.59	-0.326612	-0.326324	-0.325955
			118510	+07.170	49.21	-0.035	+0.60	-0.036	+0.47	-0.038	+0.69	+0.793831	+0.792864	+0.791790
			118488	+57.864	34.61	-0.006	+0.68	-0.005	+0.54	-0.003	+0.44	+0.859136	+0.859475	+0.860082
			118470	+24.531	02.79	+0.027	-0.97	+0.026	-0.76	+0.025	-0.80	+0.100896	+0.101475	+0.101832
64	65	66	118474	+38.282	35.33	-0.017	+0.14	+0.001	+0.50	-0.005	-0.01	-0.420967	-0.421125	-0.421481
			118463	+58.105	47.47	-0.001	-0.26	+0.006	-0.65	-0.013	-0.08	-0.139005	-0.138986	-0.138787
			118454	+59.506	46.44	-0.009	+0.63	-0.004	-0.04	+0.018	+0.10	-0.033423	-0.033002	-0.032474
			118488	+57.864	34.61	-0.022	-0.49	-0.002	-0.17	-0.008	-0.02	+1.071375	+1.071866	+1.072244
			118510	+07.170	49.21	+0.050	-0.02	-0.000	+0.35	+0.008	+0.01	+0.522020	+0.521246	+0.520499
67	68	69	118488	+57.864	34.61	-0.017	+0.47	-0.030	+0.39	-0.031	+0.36	+1.021981	+1.022337	+1.022752
			118510	+07.170	49.21	+0.018	-0.39	+0.029	-0.32	+0.030	-0.31	+0.380727	+0.379841	+0.378587
			118470	+24.531	02.79	+0.034	-0.35	+0.047	-0.29	+0.050	-0.32	+0.279637	+0.279903	+0.280303
			118454	+59.506	46.44	-0.037	+0.04	-0.044	+0.04	-0.047	+0.12	-0.113694	-0.113146	-0.112360
			118474	+38.282	35.33	+0.002	+0.23	-0.002	+0.18	-0.002	+0.14	-0.568651	-0.568934	-0.569282
70	71	72	118510	+07.170	49.21	+0.008	-0.21	+0.013	+0.15	-0.023	+0.26	+0.156782	+0.156633	+0.156472
			118514	+30.156	48.87	-0.014	+0.20	+0.015	-0.43	+0.023	-0.39	-0.136201	-0.136682	-0.137114
			118474	+38.282	35.33	+0.002	-0.35	-0.016	+0.31	+0.020	-0.02	-0.249581	-0.249121	-0.248691
			118488	+57.864	34.61	+0.047	-0.12	+0.033	-0.25	-0.045	+0.30	+0.633325	+0.633829	+0.634341
			118524	+43.987	48.06	-0.043	+0.47	-0.045	+0.21	+0.025	-0.15	+0.595675	+0.593341	+0.594991
73	74	75	118510	+07.170	49.21	-0.004	+0.04	-0.009	+0.47	+0.004	-0.13	+0.242469	+0.242281	+0.242128
			118518	+48.442	17.44	+0.001	-0.01	+0.003	-0.71	-0.011	-0.14	+0.609509	+0.609072	+0.608590

			118524	+43.987	48.06	-0.007	+0.07	+0.007	+0.44	-0.005	-0.17	+0.000337	+0.000057	+0.000231
			118489	+06.233	52.35	+0.011	-0.09	+0.019	-0.35	+0.046	-0.21	-0.169987	-0.169526	-0.169065
			118474	+38.282	35.33	-0.000	-0.00	-0.021	+0.15	-0.035	+0.37	+0.317673	+0.318117	+0.318578
76	77	78	118510	+07.170	49.21	-0.024	+0.13	+0.015	+0.05	+0.003	-0.13	+0.173064	+0.173150	+0.173214
			118514	+30.156	48.87	+0.031	-0.13	-0.045	-0.08	-0.022	+0.38	+0.171867	+0.171532	+0.171197
			118474	+38.282	35.33	+0.008	-0.10	+0.015	-0.03	+0.018	-0.14	+0.255891	+0.256796	+0.257670
			118518	+48.442	17.44	-0.034	+0.24	+0.026	-0.05	+0.030	-0.24	+0.167555	+0.231514	+0.231419
79	80	81	118474	+38.282	35.33	-0.021	+0.13	-0.021	+0.12	-0.017	+0.14	+0.212585	+0.212981	+0.213385
			118463	+58.105	47.47	+0.001	-0.02	-0.001	-0.23	-0.001	-0.26	+0.178425	+0.179097	+0.179730
			118510	+07.170	49.21	+0.036	-0.21	-0.012	+0.56	-0.009	+0.63	+0.141075	+0.140728	+0.140416
			118490	+16.945	45.27	+0.018	-0.11	-0.025	-0.44	-0.002	-0.49	+0.280364	+0.280181	+0.279998
			118514	+30.156	48.87	-0.034	+0.21	+0.059	-0.01	+0.050	-0.02	+0.187550	+0.187013	+0.186470
82	83	84	118463	+58.105	47.47	+0.007	-0.07	+0.009	-0.05	+0.016	+0.03	+0.464011	+0.464244	+0.464459
			118474	+38.282	35.33	-0.001	+0.00	-0.020	-0.13	-0.013	-0.29	+0.314892	+0.314619	+0.314275
			118471	+27.122	11.12	-0.009	+0.10	+0.038	+0.42	+0.010	+0.72	+0.079994	+0.079415	+0.078844
			118457	+22.936	18.96	+0.027	-0.28	-0.013	+0.38	-0.049	+0.26	+0.019357	+0.019041	+0.018666
			118429	+22.330	31.59	-0.023	+0.25	-0.015	-0.61	+0.036	-0.71	+0.121746	+0.122681	+0.123756
85	86	87	118454	+59.506	46.44	-0.024	+0.27	+0.000	-0.05	-0.003	+0.03	+0.344898	+0.344309	+0.343737
			118457	+22.936	18.96	+0.027	-0.39	-0.003	-0.08	+0.001	-0.26	+0.136082	+0.134908	+0.133727
			118435	+12.572	26.10	-0.009	-0.29	+0.005	+0.15	+0.018	+0.18	+0.098431	+0.098722	+0.098997
			118429	+22.330	31.59	-0.001	+0.88	+0.000	+0.14	-0.018	+0.02	+0.117962	+0.118871	+0.119765
			118434	+12.426	29.68	+0.007	-0.47	-0.002	-0.16	+0.001	+0.03	+0.302628	+0.303189	+0.303774
88	89	90	118457	+22.936	18.96	+0.009	-0.01	-0.034	-0.18	-0.026	-0.41	+0.147227	+0.146047	+0.144763
			118435	+12.572	26.10	-0.009	+0.12	+0.015	+0.04	+0.021	-0.44	+0.005653	+0.005874	+0.006103
			118429	+22.330	31.59	-0.004	-0.35	-0.021	+0.02	-0.015	-0.19	+0.041092	+0.041782	+0.042481
			118426	+50.486	35.18	+0.047	+0.37	+0.005	-0.27	+0.010	+0.19	+0.260398	+0.261088	+0.261858
			118434	+12.426	29.68	-0.043	-0.13	+0.035	+0.38	+0.010	+0.85	+0.545630	+0.545208	+0.544795
91	92	93	118424	+42.737	51.69	-0.042	-0.34	+0.006	-0.16	+0.024	+0.25	+0.342072	+0.342532	+0.342984
			118434	+12.426	29.68	+0.003	+0.02	-0.013	+0.09	-0.017	-0.22	+0.449330	+0.448882	+0.448417
			118435	+12.572	26.10	+0.005	+0.04	+0.026	+0.15	-0.022	+0.04	-0.003816	-0.004734	-0.005645
			118429	+22.330	31.59	-0.025	-0.20	-0.022	-0.33	+0.034	-0.09	+0.977452	+0.077191	+0.076933
			118413	+22.103	29.51	+0.060	+0.48	+0.003	+0.26	-0.019	+0.02	+0.134963	+0.136128	+0.137311

94	95	96	118424	+42.737	51.69	+0.017	-0.08	+0.028	+0.26	-0.009	+0.16	+0.281386	+0.281464	+0.281511
			118434	+12.426	29.68	-0.029	+0.08	-0.014	-0.24	+0.004	-0.17	+0.450005	+0.449522	+0.449062
			118435	+12.572	26.10	+0.012	+0.02	-0.026	+0.21	+0.004	+0.12	+0.088656	+0.087890	+0.087092
			118413	+22.103	29.51	+0.041	-0.24	+0.028	-0.11	-0.024	+0.28	+0.041392	+0.041826	+0.042308
			118408	+51.832	06.87	-0.042	+0.21	-0.016	-0.12	+0.025	-0.39	+0.138562	+0.138298	+0.140026
97	98	99	118425	+44.984	04.82	-0.025	-0.03	-0.016	-0.28	-0.018	-0.30	+0.306811	+0.306927	+0.307053
			118434	+12.426	29.68	+0.018	+0.01	0.023	+0.14	+0.023	+0.17	+0.211136	+0.210630	+0.210087
			118435	+12.572	26.10	-0.023	+0.01	-0.023	-0.18	-0.024	-0.21	+0.017403	+0.016625	+0.015839
			118413	+22.103	29.51	+0.015	-0.02	+0.027	-0.24	+0.023	-0.19	+0.188875	+0.189320	+0.189765
			118408	+51.832	06.87	+0.015	+0.03	-0.010	+0.57	-0.003	+0.54	+0.275776	+0.276497	+0.277256
100	101	102	118395	+05.679	33.50	-0.028	+0.05	-0.028	+0.05	-0.020	-0.04	+0.129682	+0.130527	+0.131344
			118408	+51.832	06.87	+0.029	-0.05	+0.029	-0.05	+0.020	+0.04	+0.183556	+0.183459	+0.183411
			118413	+22.103	29.51	+0.003	+0.19	+0.003	+0.19	+0.004	-0.02	+0.049573	+0.049200	+0.048839
			118397	+25.581	48.69	-0.011	-0.23	-0.011	-0.23	-0.010	+0.02	+0.449907	+0.450593	+0.451286
			118424	+42.737	51.69	+0.007	+0.03	+0.007	+0.03	+0.005	+0.00	+0.187282	+0.186220	+0.185120
103	104	105	118510	+07.170	49.21	+0.014	-0.04	+0.019	+0.24	+0.013	+0.20	+0.410177	+0.410939	+0.411694
			118518	+48.442	17.44	-0.010	-0.06	-0.012	-0.34	-0.008	-0.30	+0.186444	+0.187304	+0.188191
			118542	+58.952	18.13	-0.010	+0.21	-0.014	+0.22	-0.011	+0.22	-0.025070	-0.025305	-0.025534
			118551	+40.470	54.23	+0.022	-0.18	+0.030	+0.13	+0.022	+0.09	+0.036890	+0.035945	+0.034979
			118524	+43.987	48.06	-0.017	+0.06	-0.022	-0.25	-0.016	-0.21	+0.391559	+0.391116	+0.390669
106	107	108	118518	+48.442	17.44	-0.005	-0.00	-0.004	+0.00	-0.004	+0.26	+0.283847	+0.284405	+0.285026
			118530	+21.962	21.58	-0.001	-0.17	-0.009	-0.18	-0.002	-0.43	+0.019077	+0.019016	+0.018899
			118551	+40.470	54.23	+0.015	+0.26	-0.025	+0.25	+0.006	+0.12	-0.189687	-0.190507	-0.191332
			118524	+43.987	48.06	-0.036	-0.15	-0.035	-0.11	-0.006	+0.22	+0.336801	+0.336529	+0.336263
			118510	+07.170	49.21	+0.027	+0.06	+0.024	+0.04	+0.006	-0.17	+0.549962	+0.550557	+0.551144
109	110	111	118510	+07.170	49.21	-0.004	+0.04	-0.014	+0.41	+0.010	-0.26	+0.203984	+0.203860	+0.203742
			118518	+49.442	17.44	+0.001	-0.01	+0.011	-0.61	-0.016	+0.26	+0.258662	+0.258537	+0.258423
			118524	+43.987	48.6	-0.007	+0.07	+0.002	+0.37	+0.005	-0.42	+0.159259	+0.158723	+0.158170
			118489	+06.233	52.35	+0.011	-0.09	+0.022	-0.32	+0.050	-0.20	+0.147734	+0.147888	+0.148029
			118474	+38.282	35.33	-0.000	-0.00	-0.021	+0.15	-0.049	+0.62	+0.230360	+0.230991	+0.231637
112	113	114	118510	+07.170	49.21	-0.008	-0.21	+0.017	+0.03	-0.028	+0.16	+0.191605	+0.191454	+0.191310
			118514	+30.156	48.87	-0.014	+0.20	-0.016	-0.30	+0.031	-0.19	+0.264587	+0.264483	+0.264360

			118474	+38.282	35.33	+0.002	-0.35	-0.018	+0.24	+0.018	-0.07	+0.407450	+0.408172	+0.408892
			118488	+57.864	34.61	+0.047	-0.12	+0.038	-0.26	-0.048	+0.24	+0.116537	+0.116707	+0.116876
			118524	+43.987	48.06	-0.043	+0.47	-0.053	+0.29	+0.027	-0.13	+0.019821	+0.019184	+0.018561
115	116	117	118474	+38.282	35.33	-0.011	+0.27	-0.011	+0.21	-0.011	+0.26	+0.446837	+0.447373	+0.447930
			118463	+58.105	47.47	+0.025	-0.59	+0.026	-0.46	+0.027	-0.59	+0.230011	+0.230718	+0.231364
			118510	+07.170	49.21	-0.035	+0.60	-0.036	+0.47	-0.038	+0.69	+0.402867	+0.401662	+0.400607
			118488	+57.864	34.61	-0.006	+0.68	-0.005	+0.54	-0.003	+0.44	-0.120980	-0.121499	-0.121962
			118470	+24.531	02.79	+0.027	-0.97	+0.026	-0.76	+0.025	-0.80	+0.041445	+0.041745	+0.042061
118	119	120	118474	+38.282	35.33	+0.004	+0.52	-0.005	-0.01	-0.007	-0.07	+0.509852	+0.510099	+0.510459
			118463	+58.105	47.47	+0.005	-0.46	-0.013	-0.08	-0.013	-0.20	+0.296043	+0.296434	+0.296794
			118454	+59.506	46.44	-0.007	-0.17	+0.018	+0.10	+0.018	+0.26	+0.156752	+0.157344	+0.157927
			118488	+57.864	34.61	-0.004	-0.23	-0.008	-0.02	-0.010	-0.10	-0.224352	-0.224863	-0.225365
			118510	+07.170	49.21	+0.002	+0.34	+0.008	+0.01	+0.011	+0.10	+0.261705	+0.260986	+0.260184
121	122	123	118510	+07.170	49.21	-0.004	+0.19	-0.004	+0.13	-0.005	+0.18	-0.037088	-0.038094	-0.039548
			118470	+24.531	02.79	-0.023	-0.12	-0.020	+0.04	-0.018	-0.16	+0.094774	+0.094704	+0.094618
			118454	+59.506	46.44	+0.033	-0.13	+0.030	-0.24	+0.027	-0.07	+0.225817	+0.226236	+0.226831
			118474	+38.282	35.33	-0.030	+0.76	-0.029	±.59	-0.030	+0.70	+0.281017	+0.281181	+0.281462
			118471	+27.122	11.12	+0.024	-0.69	+0.024	-0.53	+0.026	-0.65	+0.435480	+0.435973	+0.436636
124	125	126	118463	+58.105	47.47	+0.002	-0.08	+0.013	-0.54	+0.016	+0.03	+0.292840	+0.292473	+0.292090
			118474	+38.282	35.33	-0.003	+0.01	-0.012	-0.20	-0.013	-0.29	+0.198842	+0.198317	+0.197750
			118471	+27.122	11.12	-0.000	+0.11	+0.011	+0.57	+0.010	+0.72	+0.101722	+0.101408	+0.101098
			118457	+22.936	18.96	+0.004	-0.32	-0.039	+0.42	-0.049	+0.26	+0.118618	+0.118715	+0.118804
			118429	+22.330	31.59	-0.004	+0.28	+0.026	-0.75	+0.036	-0.71	+0.287979	+0.289087	+0.290257
127	128	129	118454	+59.506	46.44	-0.016	+0.25	+0.000	-0.05	-0.002	+0.08	-0.001455	-0.002378	-0.003241
			118457	+22.936	18.96	+0.018	-0.36	-0.003	-0.08	+0.000	-0.49	+0.109507	+0.108531	+0.107601
			118435	+12.572	26.10	-0.006	-0.29	+0.005	+0.15	+0.012	+0.19	+0.324807	+0.325306	+0.325774
			118429	+22.330	31.59	-0.002	+0.86	+0.000	+0.14	-0.012	+0.17	+0.384144	+0.385171	+0.386151
			118434	+12.426	29.68	+0.005	-0.45	-0.002	-0.16	+0.001	+0.05	+0.182996	+0.183370	+0.183715
130	131	132	118457	+22.936	18.96	+0.008	-0.01	+0.001	-0.19	-0.038	-0.01	-0.079882	-0.081204	-0.082533
			118435	+12.572	26.10	-0.008	+0.14	+0.006	+0.06	+0.014	-0.07	+0.394728	+0.395379	+0.395999
			118429	+22.330	31.59	-0.004	-0.41	-0.005	+0.18	-0.014	+0.27	+0.487050	+0.488077	+0.489164
			118426	+50.466	35.18	+0.042	+0.45	+0.002	-0.15	-0.016	-0.62	+0.346944	+0.347704	+0.348466

			118434	+12.426	29.68	-0.038	-0.17	-0.004	+0.10	+0.053	+0.44	-0.148840	-0.149957	-0.151095
133	134	135	118424	+42.737	51.69	-0.042	-0.34	+0.006	-0.16	+0.016	+0.12	+0.126751	+0.126988	+0.127211
			118434	+12.426	29.68	+0.003	+0.02	-0.013	+0.09	-0.011	-0.14	-0.229097	-0.229978	-0.230859
			118435	+12.572	26.10	+0.005	+0.04	+0.026	+0.15	-0.020	+0.25	+0.243930	+0.243296	+0.242635
			118429	+22.330	31.59	-0.025	-0.20	-0.022	-0.33	+0.032	-0.43	+0.295808	+0.295724	+0.295674
			118413	+22.103	29.51	+0.060	+0.48	+0.003	+0.26	0.017	+0.20	+0.562609	+0.563970	+0.565339
136	137	138	118424	+42.737	51.69	-0.002	-0.08	+0.021	+0.13	-0.009	+0.12	+0.036847	+0.036684	+0.036559
			118434	+12.426	29.68	-0.023	+0.09	-0.006	-0.14	-0.003	-0.08	-0.222536	-0.223348	-0.224264
			118435	+12.572	26.10	+0.044	+0.02	-0.040	+0.19	+0.018	-0.00	+0.512057	+0.511649	+0.511339
			118413	+22.103	29.51	-0.038	-0.26	+0.037	-0.13	-0.034	+0.29	+0.449606	+0.450271	+0.450868
			118498	+51.832	06.87	+0.019	-0.23	-0.013	-0.05	+0.028	-0.33	+0.224025	+0.224744	+0.225498
139	140	141	118425	+44.984	04.82	-0.012	-0.03	-0.024	-0.06	-0.019	-0.16	-0.171712	-0.171889	-0.172133
			118434	+12.426	29.68	+0.016	-0.02	+0.019	+0.09	+0.025	+0.10	-0.275941	-0.276754	-0.277533
			118435	+12.572	26.10	-0.031	+0.09	-0.028	-0.18	-0.027	-0.12	+0.360557	+0.360056	+0.359553
			118413	+22.103	29.51	+0.027	-0.10	+0.019	+0.17	+0.029	-0.08	+0.614004	+0.614751	+0.615463
			118408	+51.832	06.87	-0.000	+0.07	+0.013	-0.01	-0.009	+0.27	+0.473091	+0.473835	+0.474650
142	143	144	118388	+26.536	23.16	+0.009	+0.09	+0.013	+0.14	+0.017	+0.15	+0.349889	+0.350349	+0.350772
			118395	+05.679	33.50	-0.014	-0.17	-0.026	-0.28	-0.034	-0.29	+0.213176	+0.213729	+0.214233
			118408	+51.832	06.87	+0.004	+0.10	+0.018	+0.18	+0.025	+0.19	+0.146041	+0.146080	+0.146119
			118413	+22.103	29.51	+0.022	+0.13	+0.009	+0.13	+0.008	+0.13	+0.164903	+0.164705	+0.164536
			118429	+22.330	31.59	-0.021	-0.14	-0.014	-0.17	-0.016	-0.18	+0.125991	+0.125137	+0.124339
145	146	147	500001	+41.002	41.08	+0.002	-0.14	+0.005	+0.11	+0.004	+0.13	+0.662376	+0.663082	+0.663798
			118395	+05.679	33.50	+0.003	-0.24	-0.003	-0.17	-0.004	-0.22	+0.254370	+0.254921	+0.255571
			118408	+51.832	06.87	-0.018	+0.17	-0.015	+0.03	-0.004	+0.11	-0.012714	-0.012802	-0.12863
			118413	+22.103	29.51	+0.028	+0.21	+0.035	+0.31	+0.016	+0.26	+0.104684	+0.104467	+0.104171
			118429	+22.330	31.59	-0.015	-0.27	-0.022	-0.29	-0.012	-0.29	-0.008715	-0.009669	-0.010678
148	149	150	118374	+51.656	20.15	-0.027	-0.02	+0.020	-0.10	+0.007	+0.08	+0.983543	+0.984136	+0.984817
			118371	+42.844	11.38	+0.028	+0.02	-0.020	+0.10	-0.006	-0.08	+0.304320	+0.304882	+0.305367
			118361	+14.198	56.45	+0.004	+0.06	+0.006	+0.02	+0.003	+0.03	+0.373525	+0.374651	+0.375639
			118379	+20.271	43.26	-0.012	-0.08	-0.011	-0.20	-0.010	-0.11	-0.364891	-0.365189	-0.365308
			118395	+05.679	33.50	+0.007	+0.02	+0.005	+0.18	+0.007	+0.07	-0.296496	-0.298479	-0.300516
151	152	153	118454	+59.506	46.44	-0.000	-0.05	-0.000	-0.04	-0.003	+0.12	+0.175915	+0.175041	+0.174416

			118457	+22.936	18.96	-0.003	-0.15	-0.002	-0.18	+0.003	-0.66	+0.466476	+0.465065	+0.464001
			118435	+12.572	26.10	+0.005	+0.26	+0.004	+0.32	+0.013	+0.22	+0.240287	+0.240744	+0.241072
			118429	+11.330	31.59	-0.001	+0.14	+0.001	+0.12	-0.014	+0.26	+0.113664	+0.114876	+0.115760
			118434	+12.426	29.68	-0.001	-0.21	-0.002	-0.22	+0.001	+0.06	+0.003658	+0.004273	+0.004751
154	155	156	118457	+22.936	18.96	+0.009	-0.01	-0.034	-0.18	-0.035	-0.43	+0.290839	+0.289372	+0.288015
			118435	+12.572	26.10	-0.009	+0.12	+0.015	+0.04	+0.033	-0.09	+0.271289	+0.271734	+0.272122
			118429	+22.330	31.59	-0.004	-0.35	-0.021	+0.02	-0.020	-0.22	+0.230830	+0.231801	+0.232681
			118426	+50.486	35.18	+0.047	+0.37	+0.005	-0.27	+0.013	+0.18	+0.133280	+0.134133	+0.134920
			118434	+12.426	29.68	-0.043	-0.13	+0.035	+0.38	+0.009	+0.56	+0.073762	+0.072960	+0.072262
157	158	159	118424	+42.737	51.69	-0.032	-0.35	+0.029	+0.29	+0.009	-0.20	+0.050778	+0.051196	+0.051626
			118434	+12.426	29.68	+0.003	+0.03	-0.019	-0.31	-0.013	+0.13	+0.061335	+0.060693	+0.060048
			118435	+12.572	26.10	+0.003	+0.03	-0.002	+0.44	+0.017	+0.13	+0.439144	+0.438278	+0.437417
			118429	+22.330	31.59	-0.019	-0.20	+0.015	-0.33	-0.008	-0.36	+0.315341	+0.315137	+0.314922
			118413	+22.103	29.51	+0.045	+0.48	-0.023	-0.09	-0.005	+0.30	+0.133402	+0.134696	+0.135987
160	161	162	118425	+44.984	04.82	-0.025	-0.03	-0.016	-0.28	-0.018	-0.30	-0.053055	-0.053047	-0.053078
			118434	+12.426	29.68	+0.018	+0.01	+0.023	+0.14	+0.023	+0.17	+0.003984	+0.003327	+0.002690
			118435	+12.572	26.10	-0.023	+0.01	-0.023	-0.18	-0.024	-0.21	+0.448342	+0.447652	+0.446945
			118413	+22.103	29.51	+0.015	-0.02	+0.027	-0.24	+0.023	-0.19	+0.371973	+0.372542	+0.373124
			118408	+51.832	06.87	+0.015	+0.03	-0.010	+0.57	-0.003	+0.54	+0.228756	+0.229526	+0.230319

23

24

1