

# VOYAGER

## FORMULA FOR CALCULATING TOTAL FLUX DENSITY (APPROXIMATELY)

$$S = \left[ \frac{S_0}{1 + \cos^2 \theta} \right] \left[ 10 \frac{m_R}{1000} - 10 \frac{m'_R}{1000} + 10 \frac{m_L}{1000} - 10 \frac{m'_L}{1000} \right]$$

where

$S$  = total jupiter flux density when  $m_R$  and  $m_L$  are the RH and LH millibel readings, and  $m'_R$  and  $m'_L$  are the corresponding readings for the undisturbed background levels as close as possible to the event.

$\theta$  = angle of the radius vector to jupiter with respect to the plane formed by the two monopoles.

$S_0$  is given for each channel in Table 1. The first column is the channel number, the second is the center frequency, and the third is  $S_0$ .

$\theta$  is given for each date (at 0<sup>h</sup> UT) by the fourth column of Table 2.

(alpha and beta are the angles from the radius vector to the X and Y monopoles, respectively. The light travel time is given in the last column of Table 2.)

Tom Carr  
7/31/85

TABLE 1.

S<sub>2</sub>

## PRA ANT CALIBRATION CONSTANTS

CH	FREQ	A9.38-.625-50A	A9.5-.625-50A	A9.5-.625-50-0A	A9.5-1.25-80-0A	A9.5-1.25-80-0
3	40.2MHZ	7.233E-21	7.259E-21	4.283E-21	6.535E-21	6.535E-21
4	39.9MHZ	9.018E-21	6.763E-21	5.136E-21	6.602E-21	6.602E-21
5	39.6MHZ	1.225E-20	7.657E-21	6.752E-21	7.642E-21	7.642E-21
6	39.3MHZ	1.685E-20	1.002E-20	9.134E-21	9.696E-21	9.696E-21
7	39.0MHZ	2.258E-20	1.383E-20	1.222E-20	1.273E-20	1.273E-20
8	38.7MHZ	2.910E-20	1.896E-20	1.589E-20	1.664E-20	1.664E-20
9	38.4MHZ	3.599E-20	2.510E-20	1.996E-20	2.120E-20	2.120E-20
10	38.0MHZ	4.279E-20	3.187E-20	2.415E-20	2.614E-20	2.614E-20
11	37.7MHZ	4.908E-20	3.881E-20	2.822E-20	3.111E-20	3.111E-20
12	37.4MHZ	5.452E-20	4.546E-20	3.189E-20	3.580E-20	3.580E-20
13	37.1MHZ	5.890E-20	5.141E-20	3.496E-20	3.990E-20	3.990E-20
14	36.8MHZ	6.212E-20	5.638E-20	3.730E-20	4.323E-20	4.323E-20
15	36.5MHZ	6.421E-20	6.021E-20	3.886E-20	4.568E-20	4.568E-20
16	36.2MHZ	6.523E-20	6.286E-20	3.966E-20	4.722E-20	4.722E-20
17	35.9MHZ	6.531E-20	6.438E-20	3.976E-20	4.790E-20	4.790E-20
18	35.6MHZ	6.461E-20	6.488E-20	3.927E-20	4.783E-20	4.783E-20
19	35.3MHZ	6.326E-20	6.450E-20	3.830E-20	4.713E-20	4.713E-20
20	35.0MHZ	6.141E-20	6.341E-20	3.696E-20	4.591E-20	4.591E-20
21	34.7MHZ	5.917E-20	6.174E-20	3.535E-20	4.431E-20	4.431E-20
22	34.4MHZ	5.666E-20	5.963E-20	3.355E-20	4.242E-20	4.242E-20
23	34.0MHZ	5.395E-20	5.719E-20	3.165E-20	4.033E-20	4.033E-20
24	33.7MHZ	5.112E-20	5.453E-20	2.968E-20	3.813E-20	3.813E-20
25	33.4MHZ	4.823E-20	5.172E-20	2.771E-20	3.588E-20	3.588E-20
26	33.1MHZ	4.532E-20	4.882E-20	2.577E-20	3.362E-20	3.362E-20
27	32.8MHZ	4.243E-20	4.590E-20	2.387E-20	3.139E-20	3.139E-20
28	32.5MHZ	3.959E-20	4.298E-20	2.205E-20	2.922E-20	2.922E-20
29	32.2MHZ	3.682E-20	4.010E-20	2.030E-20	2.713E-20	2.713E-20
30	31.9MHZ	3.413E-20	3.729E-20	1.865E-20	2.514E-20	2.514E-20
31	31.6MHZ	3.155E-20	3.456E-20	1.708E-20	2.324E-20	2.324E-20
32	31.3MHZ	2.906E-20	3.193E-20	1.561E-20	2.144E-20	2.144E-20
33	31.0MHZ	2.670E-20	2.940E-20	1.422E-20	1.975E-20	1.975E-20
34	30.7MHZ	2.444E-20	2.699E-20	1.292E-20	1.815E-20	1.815E-20
35	30.4MHZ	2.230E-20	2.470E-20	1.170E-20	1.665E-20	1.665E-20
36	30.1MHZ	2.027E-20	2.252E-20	1.055E-20	1.522E-20	1.522E-20
37	29.7MHZ	1.835E-20	2.046E-20	9.483E-21	1.388E-20	1.388E-20
38	29.4MHZ	1.653E-20	1.851E-20	8.471E-21	1.260E-20	1.260E-20
39	29.1MHZ	1.481E-20	1.667E-20	7.519E-21	1.139E-20	1.139E-20
40	28.8MHZ	1.318E-20	1.492E-20	6.623E-21	1.024E-20	1.024E-20
41	28.5MHZ	1.164E-20	1.327E-20	5.781E-21	9.139E-21	9.139E-21
42	28.2MHZ	1.017E-20	1.171E-20	4.992E-21	8.088E-21	8.088E-21
43	27.9MHZ	8.793E-21	1.023E-20	4.256E-21	7.086E-21	7.086E-21
44	27.6MHZ	7.487E-21	8.835E-21	3.574E-21	6.135E-21	6.135E-21
45	27.3MHZ	6.265E-21	7.518E-21	2.949E-21	5.238E-21	5.238E-21
46	27.0MHZ	5.133E-21	6.286E-21	2.386E-21	4.400E-21	4.400E-21
47	26.7MHZ	4.103E-21	5.145E-21	1.890E-21	3.627E-21	3.627E-21
48	26.4MHZ	3.191E-21	4.107E-21	1.468E-21	2.930E-21	2.930E-21
49	26.1MHZ	2.415E-21	3.188E-21	1.128E-21	2.318E-21	2.318E-21
50	25.8MHZ	1.798E-21	2.406E-21	8.803E-22	1.804E-21	1.804E-21
51	25.4MHZ	1.366E-21	1.786E-21	7.329E-22	1.400E-21	1.400E-21
52	25.1MHZ	1.145E-21	1.353E-21	6.969E-22	1.122E-21	1.122E-21
53	24.8MHZ	1.159E-21	1.133E-21	7.825E-22	9.852E-22	9.852E-22
54	24.5MHZ	1.429E-21	1.152E-21	9.983E-22	1.002E-21	1.002E-21
55	24.2MHZ	1.968E-21	1.432E-21	1.350E-21	1.186E-21	1.186E-21
56	23.9MHZ	2.776E-21	1.985E-21	1.840E-21	1.544E-21	1.544E-21



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PRA ANT CALIBRATION CONSTANTS

CH	FREQ	9.38-.625-50A	9.5-.625-50A	9.5-.625-50	9.5-1.25-80	9.5-1.25-80-0
57	23.6MHZ	3.835E-21	2.811E-21	2.461E-21	2.077E-21	2.077E-21
58	23.3MHZ	5.103E-21	3.891E-21	3.197E-21	2.773E-21	2.773E-21
59	23.0MHZ	6.516E-21	5.180E-21	4.021E-21	3.608E-21	3.608E-21
60	22.7MHZ	7.991E-21	6.612E-21	4.892E-21	4.543E-21	4.543E-21
61	22.4MHZ	9.429E-21	8.098E-21	5.759E-21	5.522E-21	5.522E-21
62	22.1MHZ	1.073E-20	9.539E-21	6.564E-21	6.482E-21	6.482E-21
63	21.8MHZ	1.183E-20	1.083E-20	7.252E-21	7.355E-21	7.355E-21
64	21.5MHZ	1.266E-20	1.191E-20	7.780E-21	8.082E-21	8.082E-21
65	21.1MHZ	1.320E-20	1.271E-20	8.120E-21	8.623E-21	8.623E-21
66	20.8MHZ	1.345E-20	1.320E-20	8.265E-21	8.955E-21	8.955E-21
67	20.5MHZ	1.344E-20	1.341E-20	8.225E-21	9.080E-21	9.080E-21
68	20.2MHZ	1.320E-20	1.335E-20	8.025E-21	9.016E-21	9.016E-21
69	19.9MHZ	1.278E-20	1.307E-20	7.697E-21	8.792E-21	8.792E-21
70	19.6MHZ	1.221E-20	1.261E-20	7.276E-21	8.442E-21	8.442E-21
71	19.3MHZ	1.155E-20	1.201E-20	6.792E-21	8.001E-21	8.001E-21
72	19.0MHZ	1.082E-20	1.132E-20	6.274E-21	7.500E-21	7.500E-21
73	18.7MHZ	1.005E-20	1.057E-20	5.743E-21	6.965E-21	6.965E-21
74	18.4MHZ	9.275E-21	9.798E-21	5.216E-21	6.416E-21	6.416E-21
75	18.1MHZ	8.495E-21	9.007E-21	4.704E-21	5.870E-21	5.870E-21
76	17.8MHZ	7.730E-21	8.223E-21	4.217E-21	5.338E-21	5.338E-21
77	17.5MHZ	6.990E-21	7.457E-21	3.760E-21	4.828E-21	4.828E-21
78	17.2MHZ	6.282E-21	6.720E-21	3.334E-21	4.345E-21	4.345E-21
79	16.8MHZ	5.612E-21	6.018E-21	2.941E-21	3.892E-21	3.892E-21
80	16.5MHZ	4.981E-21	5.355E-21	2.581E-21	3.470E-21	3.470E-21
81	16.2MHZ	4.393E-21	4.734E-21	2.253E-21	3.080E-21	3.080E-21
82	15.9MHZ	3.849E-21	4.157E-21	1.955E-21	2.722E-21	2.722E-21
83	15.6MHZ	3.347E-21	3.625E-21	1.687E-21	2.393E-21	2.393E-21
84	15.3MHZ	2.889E-21	3.137E-21	1.446E-21	2.094E-21	2.094E-21
85	15.0MHZ	2.473E-21	2.692E-21	1.230E-21	1.821E-21	1.821E-21
86	14.7MHZ	2.097E-21	2.290E-21	1.037E-21	1.574E-21	1.574E-21
87	14.4MHZ	1.760E-21	1.929E-21	8.669E-22	1.351E-21	1.351E-21
88	14.1MHZ	1.460E-21	1.606E-21	7.159E-22	1.149E-21	1.149E-21
89	13.8MHZ	1.194E-21	1.320E-21	5.834E-22	9.690E-22	9.690E-22
90	13.5MHZ	9.619E-22	1.069E-21	4.679E-22	8.076E-22	8.076E-22
91	13.2MHZ	7.599E-22	8.506E-22	3.683E-22	6.643E-22	6.643E-22
92	12.9MHZ	5.869E-22	6.622E-22	2.835E-22	5.379E-22	5.379E-22
93	12.5MHZ	4.410E-22	5.025E-22	2.125E-22	4.275E-22	4.275E-22
94	12.2MHZ	3.208E-22	3.698E-22	1.543E-22	3.323E-22	3.323E-22
95	11.9MHZ	2.246E-22	2.623E-22	1.083E-22	2.515E-22	2.515E-22
96	11.6MHZ	1.511E-22	1.786E-22	7.372E-23	1.843E-22	1.843E-22
97	11.3MHZ	9.877E-23	1.172E-22	4.982E-23	1.302E-22	1.302E-22
98	11.0MHZ	6.611E-23	7.656E-23	3.600E-23	8.861E-23	8.861E-23
99	10.7MHZ	5.164E-23	5.508E-23	3.165E-23	5.881E-23	5.881E-23
100	10.4MHZ	5.379E-23	5.120E-23	3.615E-23	4.028E-23	4.028E-23
101	10.1MHZ	7.089E-23	6.325E-23	4.892E-23	3.241E-23	3.241E-23
102	9.83MHZ	1.012E-22	8.945E-23	6.935E-23	3.458E-23	3.458E-23
103	9.52MHZ	1.429E-22	1.280E-22	9.683E-23	4.615E-23	4.615E-23
104	9.21MHZ	1.944E-22	1.770E-22	1.307E-22	6.647E-23	6.647E-23
105	8.90MHZ	2.537E-22	2.347E-22	1.705E-22	9.485E-23	9.485E-23
106	8.60MHZ	3.192E-22	2.992E-22	2.154E-22	1.305E-22	1.305E-22
107	8.29MHZ	3.891E-22	3.688E-22	2.650E-22	1.729E-22	1.729E-22
108	7.98MHZ	4.621E-22	4.419E-22	3.186E-22	2.212E-22	2.212E-22
109	7.68MHZ	5.366E-22	5.171E-22	3.756E-22	2.747E-22	2.747E-22
110	7.37MHZ	6.114E-22	5.929E-22	4.354E-22	3.327E-22	3.327E-22

S<sub>0</sub>

RA ANT CALIBRATION CONSTANTS

CH	FREQ	A9.38-.625-50A	A9.5-.625-50A	A9.5-.625-50-0A	A9.5-1.25-80-0A	A9.5-1.25-80-0
111	7.06MHZ	6.856E-22	6.682E-22	4.974E-22	3.945E-22	3.945E-22
112	6.75MHZ	7.582E-22	7.421E-22	5.612E-22	4.593E-22	4.593E-22
113	6.45MHZ	8.284E-22	8.137E-22	6.261E-22	5.265E-22	5.265E-22
114	6.14MHZ	8.958E-22	8.826E-22	6.916E-22	5.955E-22	5.955E-22
115	5.83MHZ	9.599E-22	9.481E-22	7.573E-22	6.655E-22	6.655E-22
116	5.52MHZ	1.020E-21	1.010E-21	8.226E-22	7.360E-22	7.360E-22
117	5.22MHZ	1.077E-21	1.068E-21	8.872E-22	8.064E-22	8.064E-22
118	4.91MHZ	1.130E-21	1.122E-21	9.506E-22	8.761E-22	8.761E-22
119	4.60MHZ	1.179E-21	1.172E-21	1.012E-21	9.445E-22	9.445E-22
120	4.30MHZ	1.224E-21	1.219E-21	1.072E-21	1.011E-21	1.011E-21
121	3.99MHZ	1.266E-21	1.261E-21	1.129E-21	1.075E-21	1.075E-21
122	3.68MHZ	1.304E-21	1.300E-21	1.183E-21	1.137E-21	1.137E-21
123	3.37MHZ	1.339E-21	1.336E-21	1.235E-21	1.195E-21	1.195E-21
124	3.07MHZ	1.370E-21	1.368E-21	1.283E-21	1.250E-21	1.250E-21
125	2.76MHZ	1.398E-21	1.396E-21	1.327E-21	1.301E-21	1.301E-21
126	2.45MHZ	1.423E-21	1.422E-21	1.368E-21	1.347E-21	1.347E-21
127	2.15MHZ	1.445E-21	1.444E-21	1.404E-21	1.389E-21	1.389E-21
128	1.84MHZ	1.463E-21	1.463E-21	1.436E-21	1.426E-21	1.426E-21
129	1.53MHZ	1.479E-21	1.479E-21	1.463E-21	1.457E-21	1.457E-21
130	1.22MHZ	1.492E-21	1.492E-21	1.486E-21	1.484E-21	1.484E-21
131	1326KHZ	1.488E-21	1.488E-21	1.479E-21	1.476E-21	1.476E-21
132	1306KHZ	1.489E-21	1.489E-21	1.481E-21	1.478E-21	1.478E-21
133	1287KHZ	1.490E-21	1.489E-21	1.482E-21	1.479E-21	1.479E-21
134	1268KHZ	1.490E-21	1.490E-21	1.483E-21	1.481E-21	1.481E-21
135	1249KHZ	1.491E-21	1.491E-21	1.484E-21	1.482E-21	1.482E-21
136	1230KHZ	1.492E-21	1.492E-21	1.486E-21	1.484E-21	1.484E-21
137	1210KHZ	1.493E-21	1.492E-21	1.487E-21	1.485E-21	1.485E-21
138	1191KHZ	1.493E-21	1.493E-21	1.488E-21	1.486E-21	1.486E-21
139	1172KHZ	1.494E-21	1.494E-21	1.489E-21	1.488E-21	1.488E-21
140	1153KHZ	1.495E-21	1.494E-21	1.491E-21	1.489E-21	1.489E-21
141	1134KHZ	1.495E-21	1.495E-21	1.492E-21	1.491E-21	1.491E-21
142	1114KHZ	1.496E-21	1.496E-21	1.493E-21	1.492E-21	1.492E-21
143	1095KHZ	1.496E-21	1.496E-21	1.494E-21	1.493E-21	1.493E-21
144	1076KHZ	1.497E-21	1.497E-21	1.495E-21	1.495E-21	1.495E-21
145	1057KHZ	1.498E-21	1.498E-21	1.496E-21	1.496E-21	1.496E-21
146	1038KHZ	1.498E-21	1.498E-21	1.497E-21	1.497E-21	1.497E-21
147	1018KHZ	1.499E-21	1.499E-21	1.498E-21	1.498E-21	1.498E-21
148	999.KHZ	1.5 E-21	1.5 E-21	1.5 E-21	1.5 E-21	1.5 E-21
149	980.KHZ	1.500E-21	1.500E-21	1.501E-21	1.501E-21	1.501E-21
150	961.KHZ	1.501E-21	1.501E-21	1.502E-21	1.502E-21	1.502E-21
151	942.KHZ	1.501E-21	1.501E-21	1.502E-21	1.503E-21	1.503E-21
152	922.KHZ	1.502E-21	1.502E-21	1.503E-21	1.504E-21	1.504E-21
153	903.KHZ	1.502E-21	1.502E-21	1.504E-21	1.505E-21	1.505E-21
154	884.KHZ	1.503E-21	1.503E-21	1.505E-21	1.506E-21	1.506E-21
155	865.KHZ	1.503E-21	1.503E-21	1.506E-21	1.507E-21	1.507E-21
156	846.KHZ	1.504E-21	1.504E-21	1.507E-21	1.508E-21	1.508E-21
157	826.KHZ	1.504E-21	1.504E-21	1.508E-21	1.509E-21	1.509E-21
158	807.KHZ	1.505E-21	1.505E-21	1.509E-21	1.510E-21	1.510E-21
159	788.KHZ	1.505E-21	1.505E-21	1.510E-21	1.511E-21	1.511E-21
160	769.KHZ	1.506E-21	1.506E-21	1.510E-21	1.512E-21	1.512E-21
161	750.KHZ	1.506E-21	1.506E-21	1.511E-21	1.513E-21	1.513E-21
162	730.KHZ	1.506E-21	1.507E-21	1.512E-21	1.514E-21	1.514E-21
163	711.KHZ	1.507E-21	1.507E-21	1.513E-21	1.515E-21	1.515E-21
164	692.KHZ	1.507E-21	1.507E-21	1.513E-21	1.516E-21	1.516E-21



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FRA ANT CALIBRATION CONSTANTS

CH	FREQ	9.38-.625-50A	9.5-.625-50A	9.5-.625-50-0A	9.5-1.25-80-0A	9.5-1.25-80-0
165	673.KHZ	1.508E-21	1.508E-21	1.514E-21	1.517E-21	1.517E-21
166	654.KHZ	1.508E-21	1.508E-21	1.515E-21	1.517E-21	1.517E-21
167	634.KHZ	1.508E-21	1.509E-21	1.516E-21	1.518E-21	1.518E-21
168	615.KHZ	1.509E-21	1.509E-21	1.516E-21	1.519E-21	1.519E-21
169	596.KHZ	1.509E-21	1.509E-21	1.517E-21	1.520E-21	1.520E-21
170	577.KHZ	1.509E-21	1.510E-21	1.517E-21	1.520E-21	1.520E-21
171	558.KHZ	1.510E-21	1.510E-21	1.518E-21	1.521E-21	1.521E-21
172	538.KHZ	1.510E-21	1.510E-21	1.519E-21	1.522E-21	1.522E-21
173	519.KHZ	1.510E-21	1.511E-21	1.519E-21	1.522E-21	1.522E-21
174	500.KHZ	1.511E-21	1.511E-21	1.520E-21	1.523E-21	1.523E-21
175	481.KHZ	1.511E-21	1.511E-21	1.520E-21	1.524E-21	1.524E-21
176	462.KHZ	1.511E-21	1.511E-21	1.521E-21	1.524E-21	1.524E-21
177	442.KHZ	1.512E-21	1.512E-21	1.521E-21	1.525E-21	1.525E-21
178	423.KHZ	1.512E-21	1.512E-21	1.522E-21	1.525E-21	1.525E-21
179	404.KHZ	1.512E-21	1.512E-21	1.522E-21	1.526E-21	1.526E-21
180	385.KHZ	1.512E-21	1.512E-21	1.522E-21	1.526E-21	1.526E-21
181	366.KHZ	1.512E-21	1.513E-21	1.523E-21	1.527E-21	1.527E-21
182	346.KHZ	1.513E-21	1.513E-21	1.523E-21	1.527E-21	1.527E-21
183	327.KHZ	1.513E-21	1.513E-21	1.524E-21	1.527E-21	1.527E-21
184	308.KHZ	1.513E-21	1.513E-21	1.524E-21	1.528E-21	1.528E-21
185	289.KHZ	1.513E-21	1.513E-21	1.524E-21	1.528E-21	1.528E-21
186	270.KHZ	1.513E-21	1.514E-21	1.524E-21	1.529E-21	1.529E-21
187	250.KHZ	1.514E-21	1.514E-21	1.525E-21	1.529E-21	1.529E-21
188	231.KHZ	1.514E-21	1.514E-21	1.525E-21	1.529E-21	1.529E-21
189	212.KHZ	1.514E-21	1.514E-21	1.525E-21	1.529E-21	1.529E-21
190	193.KHZ	1.514E-21	1.514E-21	1.525E-21	1.530E-21	1.530E-21
191	174.KHZ	1.514E-21	1.514E-21	1.526E-21	1.530E-21	1.530E-21
192	154.KHZ	1.514E-21	1.514E-21	1.526E-21	1.530E-21	1.530E-21
193	135.KHZ	1.514E-21	1.514E-21	1.526E-21	1.530E-21	1.530E-21
194	116.KHZ	1.514E-21	1.515E-21	1.526E-21	1.530E-21	1.530E-21
195	97.2KHZ	1.514E-21	1.515E-21	1.526E-21	1.531E-21	1.531E-21
196	78.0KHZ	1.514E-21	1.515E-21	1.526E-21	1.531E-21	1.531E-21
197	58.8KHZ	1.514E-21	1.515E-21	1.526E-21	1.531E-21	1.531E-21
198	39.6KHZ	1.514E-21	1.515E-21	1.526E-21	1.531E-21	1.531E-21
199	20.4KHZ	1.514E-21	1.514E-21	1.527E-21	1.531E-21	1.531E-21
200	1.20KHZ	1.559E-21	1.497E-21	1.479E-21	1.481E-21	1.481E-21

TABLE 2. VOYAGER 1

DATE	ALPHA	BETA	THETA	PHI	DIST(AU)	LT.TIME(MIN.)
781215	25.60	69.10	75.89	21.58	0.5295	4.404
781216	25.72	69.01	75.82	21.68	0.5231	4.351
781217	25.83	68.98	75.68	21.73	0.5167	4.298
781218	25.92	68.94	75.59	21.78	0.5104	4.245
781219	26.05	68.86	75.48	21.87	0.5040	4.192
781220	26.17	68.83	75.35	21.92	0.4976	4.139
781221	26.30	68.75	75.24	22.01	0.4913	4.086
781222	26.40	68.70	75.14	22.07	0.4849	4.033
781223	26.54	68.64	74.99	22.15	0.4785	3.980
781224	26.64	68.59	74.89	22.21	0.4722	3.927
781225	26.78	68.52	74.79	22.30	0.4658	3.874
781226	26.93	68.45	74.64	22.39	0.4594	3.821
781227	27.06	68.38	74.52	22.48	0.4531	3.768
781228	27.20	68.30	74.41	22.58	0.4467	3.715
781229	27.37	68.24	74.23	22.66	0.4403	3.662
781230	27.50	68.17	74.12	22.75	0.4340	3.609
781231	27.65	68.10	73.96	22.84	0.4276	3.556
790101	27.81	68.03	73.81	22.92	0.4212	3.503
790102	27.96	67.97	73.66	23.01	0.4149	3.450
790103	28.16	68.06	73.25	22.97	0.4085	3.397
790104	28.26	67.82	73.39	23.20	0.4021	3.344
790105	28.43	67.75	73.22	23.30	0.3958	3.291
790106	28.57	67.63	73.17	23.43	0.3894	3.238
790107	28.69	67.63	72.98	23.45	0.3830	3.185
790108	28.93	67.50	72.80	23.62	0.3766	3.132
790109	29.10	67.39	72.67	23.75	0.3703	3.079
790110	29.24	67.38	72.48	23.78	0.3639	3.027
790111	29.48	67.22	72.31	23.97	0.3575	2.974
790112	29.64	67.16	72.16	24.06	0.3512	2.921
790113	29.79	67.13	71.97	24.12	0.3448	2.868
790114	29.95	67.02	71.87	24.25	0.3384	2.814
790115	30.18	66.90	71.67	24.41	0.3320	2.761
790116	30.32	66.90	71.48	24.45	0.3257	2.708
790117	30.54	66.76	71.33	24.62	0.3193	2.655
790118	30.71	66.64	71.22	24.76	0.3129	2.602
790119	30.95	66.53	71.01	24.91	0.3065	2.549
790120	31.14	66.48	70.80	25.00	0.3001	2.496
790121	31.32	66.44	70.59	25.07	0.2937	2.443
790122	31.48	66.33	70.49	25.21	0.2874	2.390
790123	31.72	66.20	70.30	25.38	0.2810	2.337
790124	31.91	66.11	70.14	25.51	0.2746	2.284
790125	32.09	66.07	69.92	25.58	0.2682	2.230
790126	32.26	66.00	69.77	25.69	0.2618	2.177
790127	32.51	65.86	69.60	25.87	0.2554	2.124
790128	32.68	65.78	69.45	25.98	0.2490	2.071
790129	32.91	65.66	69.27	26.15	0.2426	2.017
790130	33.07	65.63	69.08	26.22	0.2361	1.964
790131	33.35	65.49	68.85	26.41	0.2297	1.911
790201	33.52	65.46	68.67	26.48	0.2232	1.857
790202	33.73	65.30	68.55	26.67	0.2168	1.803
790203	33.98	65.22	68.29	26.81	0.2104	1.750
790204	31.81	66.65	69.67	25.00	0.2039	1.696
790205	34.39	65.05	67.93	27.07	0.1975	1.643
790206	34.58	65.02	67.72	27.15	0.1910	1.589
790207	34.79	64.95	67.52	27.27	0.1846	1.535
790208	35.06	64.82	67.30	27.47	0.1782	1.482
790209	35.27	64.71	67.13	27.62	0.1717	1.428
790210	35.53	64.58	66.93	27.81	0.1652	1.374
790211	35.76	64.51	66.71	27.94	0.1587	1.320
790212	36.03	64.41	66.47	28.11	0.1522	1.266
790213	36.23	64.30	66.33	28.26	0.1457	1.212
790214	36.49	64.18	66.11	28.45	0.1392	1.158
790215	36.77	64.08	65.87	28.62	0.1327	1.103
790216	36.95	64.01	65.71	28.74	0.1261	1.049
790217	37.33	63.84	65.39	29.00	0.1195	0.994
790218	37.65	63.64	65.19	29.28	0.1130	0.939
790219	29.32	110.79	109.72	337.85	0.1063	0.884
790220	38.26	63.44	64.64	29.66	0.0997	0.829
790221	38.62	63.31	64.32	29.90	0.0931	0.774
790222	39.05	63.09	64.00	30.23	0.0863	0.718
790223	39.43	62.95	63.68	30.49	0.0796	0.662
790223	39.50	62.89	63.66	30.56	0.0796	0.662
790224	39.93	62.70	63.25	30.90	0.0729	0.606
790224	39.90	62.75	63.30	30.84	0.0728	0.605
790225	40.53	62.43	62.87	31.34	0.0660	0.549
790225	40.56	62.45	62.81	31.33	0.0660	0.549
790226	41.23	62.13	62.32	31.86	0.0592	0.492
790226	41.23	62.20	62.25	31.80	0.0591	0.492
790227	41.97	61.88	61.68	32.33	0.0522	0.434
790227	42.04	61.90	61.58	32.39	0.0522	0.434
790228	43.05	61.41	60.87	33.22	0.0452	0.376



DATE	ALPHA	BETA	THETA	PHI	DIST(AU)	LT.TIME(MIN.)
790301	44.45	60.93	59.71	34.24	0.0380	0.316
790302	46.47	60.18	58.15	35.83	0.0307	0.255
790303	49.64	59.07	55.77	38.43	0.0231	0.192
790303	49.73	58.97	55.77	38.57	0.0230	0.191
790304	56.08	57.01	51.23	44.30	0.0150	0.125
790305	79.30	53.87	38.13	72.52	0.0062	0.052
790305	79.78	53.90	37.98	73.25	0.0061	0.051
790306	89.73	125.19	144.81	270.46	0.0062	0.051
790306	89.29	125.04	144.96	271.24	0.0063	0.052
790307	126.64	138.55	73.35	231.47	0.0150	0.125
790307	126.53	138.61	73.27	231.57	0.0151	0.126
790308	124.24	136.76	67.00	232.32	0.0231	0.192
790309	122.91	135.65	63.90	232.77	0.0307	0.255
790310	122.12	134.89	62.09	233.01	0.0380	0.316
790310	122.09	134.89	62.05	233.03	0.0381	0.317
790311	121.47	134.35	60.74	233.25	0.0452	0.376
790311	121.53	134.32	60.78	233.19	0.0452	0.376
790312	121.12	133.93	59.89	233.32	0.0522	0.434
790312	121.09	133.94	59.89	233.34	0.0523	0.435
790313	120.78	133.65	59.24	233.45	0.0592	0.492
790313	120.78	133.62	59.21	233.43	0.0592	0.493
790315	120.34	133.14	58.23	233.55	0.0729	0.606
790316	120.04	133.15	57.94	233.79	0.0796	0.662
790317	120.02	132.84	57.59	233.65	0.0864	0.718
790317	120.02	132.84	57.58	233.65	0.0864	0.719
790318	119.73	132.84	57.31	233.89	0.0931	0.774
790319	119.81	132.67	57.20	233.74	0.0998	0.830
790320	119.76	132.64	57.11	233.77	0.1064	0.885
790321	119.63	132.58	56.93	233.85	0.1130	0.940
790322	119.61	132.49	56.81	233.82	0.1196	0.995
790323	119.63	132.44	56.77	233.77	0.1261	1.049
790324	119.52	132.45	56.69	233.87	0.1327	1.104
790325	119.54	132.38	56.63	233.81	0.1392	1.158
790326	119.51	132.34	56.56	233.82	0.1458	1.212
790327	119.57	132.34	56.61	233.77	0.1523	1.266
790326	119.40	132.43	56.55	233.96	0.1588	1.321
790329	119.46	132.41	56.59	233.90	0.1653	1.375
790330	119.45	132.36	56.52	233.88	0.1717	1.428
790331	119.46	132.38	56.56	233.88	0.1782	1.482
790401	119.51	132.37	56.58	233.84	0.1847	1.536
790402	119.51	132.36	56.58	233.83	0.1911	1.590
790403	119.47	132.39	56.58	233.88	0.1976	1.643
790404	119.55	132.42	56.68	233.83	0.2040	1.697
790405	119.54	132.42	56.68	233.84	0.2105	1.750
790406	119.63	132.41	56.75	233.75	0.2169	1.804
790407	50.02	110.69	132.84	331.20	0.2233	1.857
790408	50.08	110.70	132.90	331.15	0.2297	1.910
790409	50.28	110.67	133.11	331.08	0.2361	1.964
790410	50.00	90.00	90.00	45.00	0.2425	2.017
790411	50.34	110.64	133.18	331.09	0.2490	2.071
790412	50.43	110.48	133.38	331.23	0.2554	2.124
790413	50.41	110.61	133.28	331.09	0.2618	2.177
790414	50.56	110.69	133.37	330.92	0.2682	2.231
790415	50.65	110.67	133.47	330.89	0.2747	2.284
790416	50.67	110.35	133.71	331.25	0.2811	2.338
790417	50.30	110.69	133.11	331.05	0.2875	2.391
790418	50.39	110.63	133.24	331.07	0.2939	2.444
790419	50.78	110.40	133.78	331.13	0.3003	2.497
790420	50.50	110.51	133.42	331.15	0.3067	2.551
790421	51.02	110.49	133.95	330.90	0.3131	2.604
790422	51.42	110.88	134.09	330.24	0.3195	2.657
790423	50.94	110.56	133.83	330.86	0.3259	2.710
790424	51.62	110.93	134.25	330.09	0.3323	2.763
790425	51.19	110.57	134.06	330.73	0.3387	2.816
790426	51.33	110.41	134.31	330.83	0.3450	2.870
790427	52.02	111.03	134.57	329.75	0.3514	2.923
790428	51.64	110.98	134.23	330.01	0.3578	2.976
790429	51.72	111.29	134.10	329.63	0.3642	3.029
790430	52.27	111.34	134.61	329.26	0.3705	3.082
790501	52.31	110.95	134.90	329.68	0.3769	3.135
790502	52.71	111.21	135.12	329.16	0.3833	3.188
790503	52.47	110.65	135.26	329.93	0.3896	3.241
790504	52.56	111.06	135.06	329.41	0.3960	3.294
790505	53.15	111.32	135.47	328.77	0.4024	3.346
790506	53.08	111.29	135.42	328.85	0.4087	3.399
790507	53.22	111.56	135.37	328.46	0.4151	3.452
790508	53.65	111.45	135.86	328.33	0.4214	3.505
790509	53.93	110.98	136.43	328.70	0.4278	3.558
790510	53.96	111.54	136.10	328.03	0.4342	3.611
790511	54.09	111.56	136.20	327.93	0.4405	3.664
790512	54.31	111.63	136.36	327.72	0.4469	3.716

VOYAGER 1

DATE	ALPHA	BETA	THETA	PHI	DIST(AU)	LT.TIME(MIN.)
790513	53.96	111.53	136.20	328.22	0.4532	3.769
790514	54.46	111.30	136.73	328.00	0.4596	3.822
790515	54.52	111.72	136.50	327.48	0.4659	3.875
790516	54.91	111.68	136.90	327.27	0.4722	3.927
790517	55.18	111.86	137.02	326.89	0.4786	3.980
790518	55.34	111.96	137.11	326.66	0.4849	4.033
790519	55.21	111.85	137.06	326.89	0.4913	4.086
790520	55.67	111.68	137.61	326.78	0.4976	4.138
790521	56.10	112.40	137.51	325.66	0.5039	4.191
790522	55.99	111.82	137.81	326.40	0.5103	4.244
790523	56.30	112.15	137.87	325.80	0.5166	4.296
790524	56.70	112.50	137.99	325.12	0.5229	4.349
790525	56.64	112.24	138.13	325.46	0.5293	4.402
790526	56.31	112.18	137.85	325.77	0.5356	4.454
790527	56.36	112.38	137.75	325.49	0.5419	4.507
790528	57.29	111.78	139.04	325.52	0.5482	4.560
790529	57.36	112.29	138.74	324.88	0.5546	4.612
790530	56.94	112.41	138.27	325.05	0.5609	4.665
790531	57.90	112.57	139.04	324.16	0.5672	4.717
790601	57.46	112.83	138.45	324.20	0.5735	4.770
790602	57.95	112.55	139.10	324.14	0.5799	4.823
790603	58.00	112.71	139.03	323.92	0.5862	4.875
790604	58.63	112.88	139.48	323.25	0.5925	4.928
790605	58.86	112.81	139.73	323.14	0.5988	4.980
790606	58.48	112.54	139.57	323.75	0.6051	5.033
790607	58.83	112.63	139.84	323.37	0.6114	5.085
790608	58.99	112.77	139.87	323.08	0.6178	5.138
790609	59.62	112.96	140.30	322.36	0.6241	5.190
790610	59.33	112.99	140.02	322.55	0.6304	5.243
790611	60.11	112.81	140.85	322.12	0.6367	5.295
790612	60.20	112.51	141.15	322.39	0.6430	5.348
790613	60.59	113.12	141.04	321.36	0.6493	5.400
790614	59.99	113.32	140.36	321.64	0.6556	5.453
790615	60.34	113.13	140.81	321.55	0.6619	5.505
790616	61.26	113.28	141.51	320.58	0.6682	5.558
790617	61.26	113.08	141.65	320.81	0.6746	5.610
790618	61.69	113.40	141.78	320.06	0.6809	5.663
790619	61.62	112.95	142.06	320.64	0.6872	5.715
790620	62.12	113.54	142.05	319.50	0.6935	5.767
790621	62.53	113.17	142.67	319.54	0.6998	5.820
790622	62.59	113.63	142.38	318.95	0.7061	5.872
790623	62.78	113.73	142.47	318.66	0.7124	5.925
790624	63.05	113.75	142.68	318.38	0.7187	5.977
790625	62.85	113.82	142.45	318.49	0.7250	6.030
790626	63.29	113.63	142.97	318.28	0.7313	6.082
790627	62.97	113.99	142.41	318.18	0.7376	6.134
790628	63.63	113.44	143.39	318.15	0.7439	6.187
790629	64.19	113.53	143.79	317.47	0.7502	6.239
790630	64.23	113.79	143.62	317.13	0.7565	6.291
790701	64.11	113.76	143.54	317.31	0.7628	6.344



## VOYAGER 2

DATE	ALPHA	BETA	THETA	PHI	DIST(AU)	LT.TIME(MIN.)
781222	22.13	68.40	85.44	21.67	0.9486	7.889
781223	22.21	68.34	85.31	21.73	0.9439	7.850
781224	22.29	68.28	85.23	21.80	0.9391	7.811
781225	22.37	68.23	85.10	21.85	0.9344	7.771
781226	22.45	68.17	85.02	21.92	0.9297	7.732
781227	22.53	68.11	84.93	21.98	0.9250	7.693
781228	22.61	68.06	84.80	22.04	0.9203	7.654
781229	22.70	68.00	84.68	22.10	0.9156	7.615
781230	22.82	67.92	84.54	22.19	0.9109	7.576
781231	22.90	67.86	84.42	22.25	0.9062	7.537
790101	23.02	67.78	84.28	22.34	0.9015	7.497
790102	23.11	67.73	84.15	22.40	0.8968	7.458
790103	23.23	67.64	84.02	22.49	0.8921	7.419
790104	23.32	67.59	83.89	22.55	0.8874	7.380
790105	23.44	67.51	83.75	22.64	0.8827	7.341
790106	23.53	67.45	83.62	22.70	0.8780	7.302
790107	23.65	67.37	83.48	22.79	0.8734	7.263
790108	23.75	67.31	83.36	22.85	0.8687	7.225
790109	23.90	67.21	83.16	22.96	0.8640	7.186
790110	24.03	67.13	83.02	23.05	0.8593	7.147
790111	24.15	67.05	82.88	23.14	0.8546	7.108
790112	24.22	67.02	82.77	23.18	0.8500	7.069
790113	24.41	66.89	82.57	23.32	0.8453	7.030
790114	24.54	66.80	82.43	23.41	0.8406	6.991
790115	24.67	66.73	82.25	23.50	0.8360	6.953
790116	24.75	66.68	82.17	23.56	0.8313	6.914
790117	24.89	66.60	81.99	23.65	0.8266	6.875
790118	25.05	66.49	81.84	23.77	0.8220	6.836
790119	25.19	66.41	81.66	23.86	0.8173	6.798
790120	25.33	66.32	81.52	23.95	0.8127	6.759
790121	25.47	66.25	81.34	24.04	0.8080	6.720
790122	25.60	66.17	81.19	24.14	0.8034	6.681
790123	25.75	66.09	81.01	24.23	0.7987	6.643
790124	25.88	66.01	80.87	24.32	0.7941	6.604
790125	26.02	65.94	80.69	24.40	0.7894	6.566
790126	26.15	65.86	80.54	24.49	0.7848	6.527
790127	26.30	65.79	80.36	24.58	0.7801	6.488
790128	26.46	65.68	80.21	24.70	0.7755	6.450
790129	26.61	65.61	80.02	24.79	0.7709	6.411
790130	26.75	65.52	79.88	24.89	0.7662	6.373
790131	26.90	65.45	79.69	24.98	0.7616	6.334
790201	27.04	65.37	79.54	25.08	0.7570	6.296
790202	27.19	65.30	79.36	25.17	0.7523	6.257
790203	27.33	65.21	79.21	25.26	0.7477	6.218
790204	27.51	65.11	79.02	25.38	0.7431	6.180
790205	27.66	65.03	78.87	25.48	0.7385	6.142
790206	27.81	64.96	78.68	25.57	0.7338	6.103
790207	27.96	64.88	78.53	25.67	0.7292	6.065
790208	28.10	64.80	78.39	25.76	0.7246	6.026
790209	28.24	64.72	78.24	25.86	0.7200	5.988
790210	28.38	64.65	78.09	25.95	0.7153	5.949
790211	28.52	64.57	77.94	26.05	0.7107	5.911
790212	28.67	64.49	77.80	26.14	0.7061	5.873
790213	28.81	64.42	77.65	26.24	0.7015	5.834
790214	28.93	64.36	77.51	26.30	0.6969	5.796
790215	29.08	64.28	77.36	26.40	0.6923	5.757
790216	29.19	64.23	77.22	26.47	0.6877	5.719
790217	29.34	64.16	77.07	26.57	0.6830	5.681
790218	29.49	64.08	76.92	26.67	0.6784	5.642
790219	29.62	64.04	76.74	26.73	0.6738	5.604
790220	29.74	63.94	76.67	26.84	0.6692	5.566
790221	29.90	63.86	76.52	26.94	0.6646	5.527
790222	30.01	63.81	76.38	27.01	0.6600	5.489
790223	30.12	63.75	76.28	27.08	0.6554	5.451
790224	30.24	63.70	76.14	27.15	0.6508	5.413
790225	30.36	63.65	76.00	27.22	0.6462	5.374
790226	30.47	63.59	75.90	27.29	0.6416	5.336
790227	30.59	63.55	75.76	27.36	0.6370	5.298
790228	30.70	63.49	75.65	27.44	0.6324	5.259
790301	30.81	63.43	75.55	27.51	0.6278	5.221
790302	30.92	63.37	75.45	27.58	0.6232	5.183
790303	31.03	63.32	75.34	27.66	0.6186	5.145
790304	31.14	63.26	75.24	27.73	0.6140	5.107
790305	31.22	63.23	75.14	27.78	0.6094	5.068
790306	31.30	63.20	75.05	27.82	0.6048	5.030
790307	31.41	63.14	74.94	27.90	0.6002	4.992
790308	31.49	63.11	74.85	27.94	0.5956	4.954
790309	31.58	63.08	74.75	27.99	0.5910	4.916
790310	31.66	63.05	74.65	28.03	0.5864	4.877

## VOYAGER 2

DATE	ALPHA	BETA	THETA	PHI	DIST(AU)	LT.TIME(MIN.)
790311	31.76	62.98	74.58	28.12	0.5319	4.839
790312	31.84	62.95	74.48	28.16	0.5773	4.801
790313	31.92	62.91	74.42	28.21	0.5727	4.763
790314	31.96	62.90	74.37	28.23	0.5681	4.725
790315	32.04	62.87	74.27	28.28	0.5635	4.686
790316	32.12	62.83	74.21	28.33	0.5589	4.648
790317	32.16	62.82	74.15	28.35	0.5543	4.610
790318	32.24	62.79	74.05	28.40	0.5497	4.572
790319	32.32	62.74	73.99	28.45	0.5451	4.534
790320	32.36	62.73	73.93	28.47	0.5406	4.496
790321	32.41	62.72	73.88	28.50	0.5360	4.457
790322	32.44	62.70	73.86	28.52	0.5314	4.419
790323	32.48	62.68	73.80	28.55	0.5268	4.381
790324	32.52	62.67	73.75	28.57	0.5222	4.343
790325	32.56	62.65	73.73	28.60	0.5176	4.305
790326	32.60	62.64	73.67	28.62	0.5130	4.267
790327	32.65	62.62	73.61	28.64	0.5084	4.229
790328	32.68	62.60	73.59	28.67	0.5039	4.190
790329	32.73	62.59	73.54	28.69	0.4993	4.152
790330	32.73	62.59	73.53	28.69	0.4947	4.114
790331	32.74	62.61	73.48	28.68	0.4901	4.076
790401	32.75	62.61	73.47	28.68	0.4855	4.038
790402	32.78	62.58	73.45	28.71	0.4809	4.000
790403	32.79	62.59	73.43	28.71	0.4763	3.962
790404	32.79	62.59	73.42	28.71	0.4717	3.923
790405	32.83	62.57	73.40	28.74	0.4672	3.885
790406	32.83	62.57	73.39	28.73	0.4626	3.847
790407	32.81	62.60	73.38	28.70	0.4580	3.809
790408	32.81	62.60	73.37	28.70	0.4534	3.771
790409	32.82	62.60	73.35	28.70	0.4488	3.733
790410	32.80	62.64	73.34	28.67	0.4442	3.694
790411	32.79	62.63	73.37	28.68	0.4396	3.656
790412	32.83	62.54	73.45	28.76	0.4350	3.618
790413	32.84	62.54	73.43	28.76	0.4304	3.580
790414	32.81	62.57	73.42	28.73	0.4258	3.542
790415	32.78	62.59	73.45	28.71	0.4213	3.503
790416	32.75	62.60	73.48	28.68	0.4167	3.465
790417	32.72	62.63	73.47	28.65	0.4121	3.427
790418	32.70	62.66	73.46	28.62	0.4075	3.389
790419	32.67	62.68	73.49	28.60	0.4029	3.351
790420	32.64	62.69	73.52	28.58	0.3983	3.312
790421	32.61	62.71	73.55	28.56	0.3937	3.274
790422	32.58	62.73	73.57	28.54	0.3891	3.236
790423	32.55	62.74	73.60	28.52	0.3845	3.198
790424	32.72	62.63	73.48	28.66	0.3799	3.159
790425	32.44	62.80	73.69	28.44	0.3753	3.121
790426	32.49	62.78	73.64	28.47	0.3707	3.083
790427	32.38	62.86	73.72	28.38	0.3661	3.045
790428	32.39	62.86	73.69	28.38	0.3615	3.006
790429	32.26	62.97	73.73	28.25	0.3569	2.968
790430	32.19	62.95	73.89	28.25	0.3522	2.930
790501	32.18	62.98	73.87	28.23	0.3476	2.891
790502	32.11	62.99	73.98	28.20	0.3430	2.853
790503	32.09	63.04	73.91	28.15	0.3384	2.814
790504	32.04	63.03	74.02	28.15	0.3338	2.776
790505	31.99	63.05	74.08	28.12	0.3292	2.738
790506	31.92	63.15	74.04	28.01	0.3246	2.699
790507	31.87	63.14	74.15	28.01	0.3199	2.661
790508	31.80	63.18	74.20	27.96	0.3153	2.622
790509	31.76	63.23	74.19	27.91	0.3107	2.584
790510	31.69	63.27	74.25	27.86	0.3061	2.545
790511	31.60	63.29	74.36	27.82	0.3014	2.507
790512	31.52	63.41	74.33	27.71	0.2968	2.468
790513	31.42	63.41	74.51	27.68	0.2922	2.430
790514	31.44	63.33	74.58	27.75	0.2875	2.391
790515	31.40	63.35	74.62	27.72	0.2829	2.353
790516	31.30	63.45	74.64	27.62	0.2782	2.314
790517	31.16	63.55	74.74	27.50	0.2736	2.275
790518	31.18	63.51	74.76	27.54	0.2689	2.237
790519	31.10	63.55	74.83	27.48	0.2643	2.198
790520	31.05	63.56	74.92	27.46	0.2596	2.159
790521	30.93	63.68	74.93	27.33	0.2550	2.120
790522	30.91	63.67	74.99	27.34	0.2503	2.082
790523	30.81	63.70	75.11	27.28	0.2456	2.043
790524	30.73	63.77	75.14	27.21	0.2410	2.004
790525	30.72	63.78	75.15	27.20	0.2363	1.965
790527	30.60	63.88	75.20	27.09	0.2269	1.887
790528	30.54	63.86	75.33	27.09	0.2222	1.848
790529	30.47	63.89	75.41	27.05	0.2175	1.809
790531	30.34	63.97	75.50	26.95	0.2081	1.731



DATE	ALPHA	BETA	THETA	PHI	DIST(AU)	LT.TIME(MIN.)
790602	30.28	64.01	75.56	26.91	0.1987	1.652
790603	30.24	64.02	75.61	26.89	0.1939	1.613
790604	30.18	64.04	75.69	26.86	0.1892	1.574
790606	30.12	64.09	75.72	26.80	0.1797	1.495
790614	29.91	64.21	75.89	26.65	0.1414	1.176
790615	29.90	64.22	75.90	26.64	0.1366	1.136
790616	29.90	64.23	75.87	26.63	0.1318	1.096
790618	29.96	64.21	75.82	26.67	0.1220	1.014
790619	30.09	64.05	75.84	26.83	0.1171	0.974
790620	30.09	64.12	75.72	26.77	0.1122	0.933
790621	30.19	64.05	75.66	26.85	0.1073	0.892
790622	30.29	64.00	75.55	26.92	0.1023	0.851
790624	30.57	63.88	75.25	27.08	0.0923	0.767
790625	30.81	63.71	75.10	27.28	0.0872	0.725
790626	31.05	63.61	74.82	27.42	0.0822	0.683
790627	31.37	63.46	74.51	27.63	0.0771	0.641
790628	31.76	63.24	74.17	27.91	0.0719	0.598
790629	32.22	63.01	73.76	28.21	0.0667	0.555
790630	32.77	62.75	73.23	28.57	0.0615	0.512
790701	33.49	62.40	72.57	29.06	0.0562	0.467
790702	34.32	62.00	71.80	29.61	0.0508	0.423
790703	35.39	61.54	70.79	30.31	0.0454	0.377
790704	36.86	60.86	69.49	31.32	0.0398	0.331
790705	38.86	60.09	67.61	32.64	0.0341	0.283
790706	41.78	58.95	65.05	34.67	0.0282	0.234
790707	46.43	57.34	61.09	38.06	0.0221	0.184
790708	54.95	55.14	54.12	44.86	0.0158	0.131
790709	76.20	53.85	39.52	67.98	0.0092	0.076
790711	125.56	118.57	131.15	219.43	0.0100	0.083
790712	131.07	134.06	106.93	226.63	0.0166	0.138
790713	131.44	137.20	98.83	227.95	0.0229	0.191
790714	131.09	138.57	94.35	228.76	0.0289	0.241
790715	157.99	110.37	97.98	200.58	0.0348	0.289
790716	83.04	121.26	147.80	283.14	0.0404	0.336
790717	81.69	120.75	147.90	285.79	0.0460	0.382
790826	80.77	117.95	150.31	288.89	0.2401	1.997
790827	80.71	118.02	150.22	288.96	0.2447	2.035
790828	81.06	117.93	150.43	288.36	0.2494	2.074
790829	81.53	118.19	150.35	287.32	0.2540	2.112
790830	81.76	118.21	150.39	286.86	0.2586	2.151
790831	81.94	118.23	150.43	286.52	0.2632	2.189
790901	82.12	118.25	150.47	286.16	0.2678	2.228
790902	82.35	118.28	150.51	285.69	0.2725	2.266
790903	82.53	118.30	150.55	285.33	0.2771	2.304
790904	82.71	118.33	150.58	284.97	0.2817	2.343
790905	82.95	118.35	150.63	284.49	0.2863	2.381
790906	83.13	118.38	150.66	284.12	0.2909	2.419
790907	83.32	118.40	150.69	283.75	0.2955	2.457
790908	83.56	118.43	150.72	283.26	0.3000	2.495
790909	83.75	118.45	150.75	282.88	0.3046	2.534
790910	83.93	118.47	150.77	282.50	0.3092	2.572
790911	84.18	118.50	150.80	282.01	0.3138	2.610
790912	84.36	118.52	150.82	281.63	0.3184	2.648
790913	84.57	118.52	150.87	281.21	0.3230	2.686
790914	84.79	118.53	150.91	280.77	0.3275	2.724
790915	84.98	118.55	150.93	280.37	0.3321	2.762
790916	85.20	118.60	150.93	279.92	0.3367	2.800
790917	85.42	118.60	150.97	279.47	0.3413	2.838
790918	85.61	118.62	150.98	279.07	0.3458	2.876
790919	85.80	118.69	150.95	278.67	0.3504	2.914
790920	85.99	118.71	150.96	278.28	0.3550	2.952
790921	86.22	118.72	150.99	277.82	0.3595	2.990
790922	86.44	118.76	150.97	277.36	0.3641	3.028
790923	86.63	118.79	150.98	276.95	0.3686	3.066
790924	86.83	118.81	150.98	276.55	0.3732	3.104
790925	87.05	118.86	150.96	276.09	0.3777	3.142
790926	87.22	118.85	150.99	275.74	0.3823	3.179
790927	87.42	118.88	150.98	275.33	0.3869	3.217
790928	87.61	118.90	150.98	274.93	0.3914	3.255
790929	87.83	118.95	150.96	274.46	0.3960	3.293
790930	88.03	118.97	150.95	274.05	0.4005	3.331
791001	88.23	118.99	150.94	273.64	0.4050	3.369
791002	88.43	119.01	150.93	273.23	0.4096	3.406
791003	88.63	119.04	150.92	272.83	0.4141	3.444
791004	88.83	119.06	150.91	272.41	0.4187	3.482
791005	89.05	119.10	150.88	271.95	0.4232	3.520
791006	89.22	119.15	150.84	271.60	0.4278	3.558
791007	89.40	119.14	150.85	271.24	0.4323	3.595
791008	89.60	119.17	150.83	270.83	0.4368	3.633
791009	89.77	119.21	150.79	270.48	0.4414	3.671
791010	89.97	119.23	150.77	270.06	0.4459	3.709
791011	90.17	119.25	150.75	269.65	0.4504	3.746