

Table 7b

MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01

$\Delta T = 65.6$  s

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
103°07.5'W	70°01.91'N			09:22:38	0.0	34.0	205.7	01m29.9s
103°00.0'W	70°06.17'N			09:22:38	0.1	34.1	205.9	01m30.1s
102°52.5'W	70°10.42'N		68°25.55'N	09:22:38	0.2	34.2	205.9	01m30.2s
102°45.0'W	70°14.66'N		68°29.65'N	09:22:38	0.3	34.3	206.0	01m30.3s
102°37.5'W	70°18.89'N		68°33.75'N	09:22:38	0.3	34.4	206.1	01m30.4s
102°30.0'W	70°23.11'N		68°37.84'N	09:22:38	0.4	34.6	206.3	01m30.6s
102°22.5'W	70°27.32'N		68°41.92'N	09:22:38	0.5	34.7	206.4	01m30.7s
102°15.0'W	70°31.51'N		68°45.99'N	09:22:38	0.6	34.8	206.5	01m30.8s
102°07.5'W	70°35.70'N		68°50.05'N	09:22:38	0.7	34.9	206.6	01m30.9s
102°00.0'W	70°39.88'N		68°54.11'N	09:22:39	0.7	35.0	206.7	01m31.0s
101°52.5'W	70°44.05'N		68°58.15'N	09:22:39	0.8	35.1	206.8	01m31.2s
101°45.0'W	70°48.21'N		69°02.19'N	09:22:39	0.9	35.3	206.9	01m31.3s
101°37.5'W	70°52.35'N		69°06.22'N	09:22:39	1.0	35.4	207.0	01m31.4s
101°30.0'W	70°56.49'N		69°10.24'N	09:22:40	1.1	35.5	207.1	01m31.5s
101°22.5'W	71°00.61'N		69°14.25'N	09:22:40	1.2	35.6	207.2	01m31.7s
101°15.0'W	71°04.72'N		69°18.25'N	09:22:40	1.2	35.7	207.3	01m31.8s
101°07.5'W	71°08.83'N		69°22.25'N	09:22:41	1.3	35.9	207.4	01m31.9s
101°00.0'W	71°12.92'N		69°26.23'N	09:22:41	1.4	36.0	207.5	01m32.0s
100°52.5'W	71°17.00'N		69°30.21'N	09:22:41	1.5	36.1	207.6	01m32.1s
100°45.0'W	71°21.07'N	67°57.80'N	69°34.17'N	09:22:42	1.6	36.2	207.7	01m32.3s
100°37.5'W	71°25.13'N	68°01.66'N	69°38.13'N	09:22:42	1.6	36.3	207.8	01m32.4s
100°30.0'W	71°29.17'N	68°05.52'N	69°42.08'N	09:22:43	1.7	36.4	207.9	01m32.5s
100°22.5'W	71°33.21'N	68°09.36'N	69°46.01'N	09:22:43	1.8	36.6	208.0	01m32.6s
100°15.0'W	71°37.23'N	68°13.20'N	69°49.94'N	09:22:44	1.9	36.7	208.1	01m32.8s
100°07.5'W	71°41.24'N	68°17.03'N	69°53.86'N	09:22:44	1.9	36.8	208.2	01m32.9s
100°00.0'W	71°45.24'N	68°20.85'N	69°57.77'N	09:22:45	2.0	36.9	208.3	01m33.0s
099°52.5'W	71°49.23'N	68°24.66'N	70°01.67'N	09:22:45	2.1	37.0	208.4	01m33.1s
099°45.0'W	71°53.20'N	68°28.46'N	70°05.56'N	09:22:46	2.2	37.2	208.5	01m33.2s
099°37.5'W	71°57.17'N	68°32.26'N	70°09.44'N	09:22:47	2.3	37.3	208.6	01m33.4s
099°30.0'W	72°01.12'N	68°36.05'N	70°13.31'N	09:22:47	2.3	37.4	208.7	01m33.5s
099°22.5'W	72°05.06'N	68°39.82'N	70°17.16'N	09:22:48	2.4	37.5	208.8	01m33.6s
099°15.0'W	72°08.98'N	68°43.59'N	70°21.01'N	09:22:49	2.5	37.6	208.9	01m33.7s
099°07.5'W	72°12.90'N	68°47.36'N	70°24.85'N	09:22:49	2.6	37.8	209.0	01m33.8s
099°00.0'W	72°16.80'N	68°51.11'N	70°28.68'N	09:22:50	2.6	37.9	209.1	01m33.9s
098°52.5'W	72°20.69'N	68°54.85'N	70°32.50'N	09:22:51	2.7	38.0	209.2	01m34.1s
098°45.0'W	72°24.56'N	68°58.59'N	70°36.31'N	09:22:51	2.8	38.1	209.3	01m34.2s
098°37.5'W	72°28.43'N	69°02.32'N	70°40.11'N	09:22:52	2.9	38.2	209.3	01m34.3s
098°30.0'W	72°32.28'N	69°06.03'N	70°43.89'N	09:22:53	2.9	38.4	209.4	01m34.4s
098°22.5'W	72°36.12'N	69°09.74'N	70°47.67'N	09:22:54	3.0	38.5	209.5	01m34.5s
098°15.0'W	72°39.94'N	69°13.44'N	70°51.43'N	09:22:55	3.1	38.6	209.6	01m34.7s
098°07.5'W	72°43.75'N	69°17.13'N	70°55.19'N	09:22:55	3.2	38.7	209.7	01m34.8s
098°00.0'W	72°47.55'N	69°20.82'N	70°58.93'N	09:22:56	3.2	38.9	209.8	01m34.9s
097°52.5'W	72°51.34'N	69°24.49'N	71°02.67'N	09:22:57	3.3	39.0	209.9	01m35.0s
097°45.0'W	72°55.11'N	69°28.15'N	71°06.39'N	09:22:58	3.4	39.1	209.9	01m35.1s
097°37.5'W	72°58.87'N	69°31.81'N	71°10.10'N	09:22:59	3.5	39.2	210.0	01m35.2s
097°30.0'W	73°02.62'N	69°35.45'N	71°13.80'N	09:23:00	3.5	39.3	210.1	01m35.4s
097°22.5'W	73°06.35'N	69°39.09'N	71°17.49'N	09:23:01	3.6	39.5	210.2	01m35.5s
097°15.0'W	73°10.07'N	69°42.71'N	71°21.17'N	09:23:02	3.7	39.6	210.3	01m35.6s
097°07.5'W	73°13.78'N	69°46.33'N	71°24.84'N	09:23:03	3.8	39.7	210.4	01m35.7s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
097°00.0'W	73°17.47'N	69°49.93'N	71°28.49'N	09:23:04	3.8	39.8	210.4	01m35.8s
096°52.5'W	73°21.15'N	69°53.53'N	71°32.14'N	09:23:05	3.9	40.0	210.5	01m35.9s
096°45.0'W	73°24.82'N	69°57.12'N	71°35.77'N	09:23:06	4.0	40.1	210.6	01m36.0s
096°37.5'W	73°28.47'N	70°00.70'N	71°39.39'N	09:23:07	4.1	40.2	210.7	01m36.2s
096°30.0'W	73°32.11'N	70°04.26'N	71°43.00'N	09:23:08	4.1	40.3	210.8	01m36.3s
096°22.5'W	73°35.74'N	70°07.82'N	71°46.60'N	09:23:09	4.2	40.5	210.8	01m36.4s
096°15.0'W	73°39.35'N	70°11.37'N	71°50.19'N	09:23:10	4.3	40.6	210.9	01m36.5s
096°07.5'W	73°42.94'N	70°14.91'N	71°53.76'N	09:23:11	4.3	40.7	211.0	01m36.6s
096°00.0'W	73°46.53'N	70°18.44'N	71°57.32'N	09:23:12	4.4	40.8	211.1	01m36.7s
095°52.5'W	73°50.10'N	70°21.96'N	72°00.88'N	09:23:13	4.5	40.9	211.1	01m36.8s
095°45.0'W	73°53.65'N	70°25.46'N	72°04.42'N	09:23:14	4.6	41.1	211.2	01m36.9s
095°37.5'W	73°57.20'N	70°28.96'N	72°07.95'N	09:23:15	4.6	41.2	211.3	01m37.1s
095°30.0'W	74°00.73'N	70°32.45'N	72°11.46'N	09:23:17	4.7	41.3	211.4	01m37.2s
095°22.5'W	74°04.24'N	70°35.93'N	72°14.97'N	09:23:18	4.8	41.4	211.4	01m37.3s
095°15.0'W	74°07.74'N	70°39.40'N	72°18.46'N	09:23:19	4.8	41.6	211.5	01m37.4s
095°07.5'W	74°11.23'N	70°42.86'N	72°21.94'N	09:23:20	4.9	41.7	211.6	01m37.5s
095°00.0'W	74°14.70'N	70°46.30'N	72°25.41'N	09:23:21	5.0	41.8	211.7	01m37.6s
094°52.5'W	74°18.16'N	70°49.74'N	72°28.87'N	09:23:23	5.0	41.9	211.7	01m37.7s
094°45.0'W	74°21.60'N	70°53.17'N	72°32.32'N	09:23:24	5.1	42.1	211.8	01m37.8s
094°37.5'W	74°25.03'N	70°56.58'N	72°35.75'N	09:23:25	5.2	42.2	211.9	01m37.9s
094°30.0'W	74°28.44'N	70°59.99'N	72°39.17'N	09:23:26	5.3	42.3	211.9	01m38.1s
094°22.5'W	74°31.85'N	71°03.38'N	72°42.58'N	09:23:28	5.3	42.4	212.0	01m38.2s
094°15.0'W	74°35.23'N	71°06.77'N	72°45.98'N	09:23:29	5.4	42.6	212.1	01m38.3s
094°07.5'W	74°38.61'N	71°10.14'N	72°49.36'N	09:23:30	5.5	42.7	212.1	01m38.4s
094°00.0'W	74°41.96'N	71°13.51'N	72°52.73'N	09:23:32	5.5	42.8	212.2	01m38.5s
093°52.5'W	74°45.31'N	71°16.86'N	72°56.09'N	09:23:33	5.6	42.9	212.3	01m38.6s
093°45.0'W	74°48.64'N	71°20.20'N	72°59.44'N	09:23:34	5.7	43.1	212.3	01m38.7s
093°37.5'W	74°51.95'N	71°23.53'N	73°02.78'N	09:23:36	5.7	43.2	212.4	01m38.8s
093°30.0'W	74°55.25'N	71°26.85'N	73°06.10'N	09:23:37	5.8	43.3	212.5	01m38.9s
093°22.5'W	74°58.54'N	71°30.17'N	73°09.41'N	09:23:38	5.9	43.5	212.5	01m39.0s
093°15.0'W	75°01.81'N	71°33.47'N	73°12.71'N	09:23:40	5.9	43.6	212.6	01m39.1s
093°07.5'W	75°05.07'N	71°36.75'N	73°16.00'N	09:23:41	6.0	43.7	212.7	01m39.2s
093°00.0'W	75°08.32'N	71°40.03'N	73°19.27'N	09:23:42	6.1	43.8	212.7	01m39.3s
092°52.5'W	75°11.55'N	71°43.30'N	73°22.53'N	09:23:44	6.1	44.0	212.8	01m39.4s
092°45.0'W	75°14.76'N	71°46.56'N	73°25.78'N	09:23:45	6.2	44.1	212.8	01m39.5s
092°37.5'W	75°17.96'N	71°49.80'N	73°29.02'N	09:23:47	6.2	44.2	212.9	01m39.6s
092°30.0'W	75°21.15'N	71°53.04'N	73°32.24'N	09:23:48	6.3	44.3	213.0	01m39.8s
092°22.5'W	75°24.32'N	71°56.26'N	73°35.45'N	09:23:50	6.4	44.5	213.0	01m39.9s
092°15.0'W	75°27.48'N	71°59.47'N	73°38.65'N	09:23:51	6.4	44.6	213.1	01m40.0s
092°07.5'W	75°30.62'N	72°02.67'N	73°41.84'N	09:23:53	6.5	44.7	213.1	01m40.1s
092°00.0'W	75°33.75'N	72°05.86'N	73°45.01'N	09:23:54	6.6	44.8	213.2	01m40.2s
091°52.5'W	75°36.86'N	72°09.04'N	73°48.18'N	09:23:56	6.6	45.0	213.3	01m40.3s
091°45.0'W	75°39.96'N	72°12.21'N	73°51.32'N	09:23:57	6.7	45.1	213.3	01m40.4s
091°37.5'W	75°43.05'N	72°15.37'N	73°54.46'N	09:23:59	6.8	45.2	213.4	01m40.5s
091°30.0'W	75°46.12'N	72°18.52'N	73°57.59'N	09:24:00	6.8	45.4	213.4	01m40.6s
091°22.5'W	75°49.18'N	72°21.65'N	74°00.70'N	09:24:02	6.9	45.5	213.5	01m40.7s
091°15.0'W	75°52.22'N	72°24.78'N	74°03.80'N	09:24:03	6.9	45.6	213.5	01m40.8s
091°07.5'W	75°55.25'N	72°27.89'N	74°06.88'N	09:24:05	7.0	45.7	213.6	01m40.9s
091°00.0'W	75°58.26'N	72°30.99'N	74°09.96'N	09:24:06	7.1	45.9	213.7	01m41.0s
090°52.5'W	76°01.26'N	72°34.08'N	74°13.02'N	09:24:08	7.1	46.0	213.7	01m41.1s
090°45.0'W	76°04.25'N	72°37.16'N	74°16.07'N	09:24:09	7.2	46.1	213.8	01m41.2s
090°37.5'W	76°07.22'N	72°40.23'N	74°19.10'N	09:24:11	7.2	46.2	213.8	01m41.3s

Table 7b (CONTINUED)

MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
090°30.0'W	76°10.18'N	72°43.29'N	74°22.13'N	09:24:12	7.3	46.4	213.9	01m41.4s
090°22.5'W	76°13.12'N	72°46.34'N	74°25.14'N	09:24:14	7.4	46.5	213.9	01m41.5s
090°15.0'W	76°16.05'N	72°49.37'N	74°28.14'N	09:24:16	7.4	46.6	214.0	01m41.6s
090°07.5'W	76°18.96'N	72°52.39'N	74°31.12'N	09:24:17	7.5	46.8	214.0	01m41.7s
090°00.0'W	76°21.87'N	72°55.41'N	74°34.10'N	09:24:19	7.5	46.9	214.1	01m41.8s
089°52.5'W	76°24.75'N	72°58.41'N	74°37.06'N	09:24:20	7.6	47.0	214.1	01m41.9s
089°45.0'W	76°27.63'N	73°01.40'N	74°40.00'N	09:24:22	7.7	47.1	214.2	01m42.0s
089°37.5'W	76°30.48'N	73°04.38'N	74°42.94'N	09:24:24	7.7	47.3	214.2	01m42.1s
089°30.0'W	76°33.33'N	73°07.35'N	74°45.86'N	09:24:25	7.8	47.4	214.3	01m42.1s
089°22.5'W	76°36.16'N	73°10.30'N	74°48.77'N	09:24:27	7.8	47.5	214.3	01m42.2s
089°15.0'W	76°38.97'N	73°13.25'N	74°51.67'N	09:24:29	7.9	47.7	214.4	01m42.3s
089°07.5'W	76°41.78'N	73°16.18'N	74°54.56'N	09:24:30	8.0	47.8	214.4	01m42.4s
089°00.0'W	76°44.56'N	73°19.11'N	74°57.43'N	09:24:32	8.0	47.9	214.5	01m42.5s
088°52.5'W	76°47.34'N	73°22.02'N	75°00.29'N	09:24:34	8.1	48.1	214.5	01m42.6s
088°45.0'W	76°50.10'N	73°24.92'N	75°03.14'N	09:24:35	8.1	48.2	214.6	01m42.7s
088°37.5'W	76°52.84'N	73°27.81'N	75°05.97'N	09:24:37	8.2	48.3	214.6	01m42.8s
088°30.0'W	76°55.58'N	73°30.69'N	75°08.80'N	09:24:39	8.2	48.4	214.7	01m42.9s
088°22.5'W	76°58.30'N	73°33.55'N	75°11.61'N	09:24:40	8.3	48.6	214.7	01m43.0s
088°15.0'W	77°01.00'N	73°36.41'N	75°14.41'N	09:24:42	8.4	48.7	214.8	01m43.1s
088°07.5'W	77°03.69'N	73°39.25'N	75°17.19'N	09:24:44	8.4	48.8	214.8	01m43.2s
088°00.0'W	77°06.37'N	73°42.09'N	75°19.97'N	09:24:45	8.5	49.0	214.8	01m43.3s
087°52.5'W	77°09.04'N	73°44.91'N	75°22.73'N	09:24:47	8.5	49.1	214.9	01m43.4s
087°45.0'W	77°11.68'N	73°47.72'N	75°25.47'N	09:24:49	8.6	49.2	214.9	01m43.5s
087°37.5'W	77°14.32'N	73°50.52'N	75°28.21'N	09:24:50	8.6	49.3	215.0	01m43.5s
087°30.0'W	77°16.95'N	73°53.31'N	75°30.93'N	09:24:52	8.7	49.5	215.0	01m43.6s
087°22.5'W	77°19.56'N	73°56.09'N	75°33.65'N	09:24:54	8.7	49.6	215.1	01m43.7s
087°15.0'W	77°22.15'N	73°58.85'N	75°36.35'N	09:24:55	8.8	49.7	215.1	01m43.8s
087°07.5'W	77°24.74'N	74°01.61'N	75°39.03'N	09:24:57	8.9	49.9	215.2	01m43.9s
087°00.0'W	77°27.31'N	74°04.35'N	75°41.71'N	09:24:59	8.9	50.0	215.2	01m44.0s
086°52.5'W	77°29.86'N	74°07.08'N	75°44.37'N	09:25:01	9.0	50.1	215.2	01m44.1s
086°45.0'W	77°32.40'N	74°09.80'N	75°47.02'N	09:25:02	9.0	50.3	215.3	01m44.2s
086°37.5'W	77°34.93'N	74°12.51'N	75°49.66'N	09:25:04	9.1	50.4	215.3	01m44.3s
086°30.0'W	77°37.45'N	74°15.21'N	75°52.29'N	09:25:06	9.1	50.5	215.4	01m44.3s
086°22.5'W	77°39.95'N	74°17.90'N	75°54.90'N	09:25:08	9.2	50.6	215.4	01m44.4s
086°15.0'W	77°42.44'N	74°20.58'N	75°57.50'N	09:25:09	9.2	50.8	215.4	01m44.5s
086°07.5'W	77°44.92'N	74°23.24'N	76°00.09'N	09:25:11	9.3	50.9	215.5	01m44.6s
086°00.0'W	77°47.39'N	74°25.90'N	76°02.67'N	09:25:13	9.3	51.0	215.5	01m44.7s
085°52.5'W	77°49.84'N	74°28.54'N	76°05.24'N	09:25:15	9.4	51.2	215.6	01m44.8s
085°45.0'W	77°52.27'N	74°31.18'N	76°07.79'N	09:25:16	9.4	51.3	215.6	01m44.9s
085°37.5'W	77°54.70'N	74°33.80'N	76°10.33'N	09:25:18	9.5	51.4	215.6	01m44.9s
085°30.0'W	77°57.11'N	74°36.41'N	76°12.86'N	09:25:20	9.5	51.6	215.7	01m45.0s
085°22.5'W	77°59.51'N	74°39.01'N	76°15.38'N	09:25:22	9.6	51.7	215.7	01m45.1s
085°15.0'W	78°01.90'N	74°41.60'N	76°17.89'N	09:25:23	9.6	51.8	215.8	01m45.2s
085°07.5'W	78°04.27'N	74°44.17'N	76°20.38'N	09:25:25	9.7	52.0	215.8	01m45.3s
085°00.0'W	78°06.63'N	74°46.74'N	76°22.87'N	09:25:27	9.7	52.1	215.8	01m45.4s
084°52.5'W	78°08.98'N	74°49.30'N	76°25.34'N	09:25:29	9.8	52.2	215.9	01m45.5s
084°45.0'W	78°11.32'N	74°51.84'N	76°27.80'N	09:25:30	9.8	52.3	215.9	01m45.5s
084°37.5'W	78°13.64'N	74°54.38'N	76°30.24'N	09:25:32	9.9	52.5	215.9	01m45.6s
084°30.0'W	78°15.96'N	74°56.90'N	76°32.68'N	09:25:34	9.9	52.6	216.0	01m45.7s
084°22.5'W	78°18.25'N	74°59.41'N	76°35.10'N	09:25:36	10.0	52.7	216.0	01m45.8s
084°15.0'W	78°20.54'N	75°01.91'N	76°37.52'N	09:25:37	10.0	52.9	216.1	01m45.9s
084°07.5'W	78°22.81'N	75°04.40'N	76°39.92'N	09:25:39	10.1	53.0	216.1	01m45.9s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
084°00.0'W	78°25.08'N	75°06.88'N	76°42.31'N	09:25:41	10.1	53.1	216.1	01m46.0s
083°52.5'W	78°27.33'N	75°09.35'N	76°44.68'N	09:25:43	10.2	53.3	216.2	01m46.1s
083°45.0'W	78°29.56'N	75°11.81'N	76°47.05'N	09:25:45	10.2	53.4	216.2	01m46.2s
083°37.5'W	78°31.79'N	75°14.26'N	76°49.41'N	09:25:46	10.3	53.5	216.2	01m46.3s
083°30.0'W	78°34.00'N	75°16.70'N	76°51.75'N	09:25:48	10.3	53.7	216.3	01m46.3s
083°22.5'W	78°36.20'N	75°19.12'N	76°54.08'N	09:25:50	10.4	53.8	216.3	01m46.4s
083°15.0'W	78°38.39'N	75°21.54'N	76°56.40'N	09:25:52	10.4	53.9	216.3	01m46.5s
083°07.5'W	78°40.57'N	75°23.94'N	76°58.71'N	09:25:53	10.5	54.1	216.4	01m46.6s
083°00.0'W	78°42.74'N	75°26.34'N	77°01.01'N	09:25:55	10.5	54.2	216.4	01m46.7s
082°52.5'W	78°44.89'N	75°28.72'N	77°03.30'N	09:25:57	10.6	54.3	216.4	01m46.7s
082°45.0'W	78°47.03'N	75°31.10'N	77°05.57'N	09:25:59	10.6	54.4	216.5	01m46.8s
082°37.5'W	78°49.16'N	75°33.46'N	77°07.84'N	09:26:01	10.6	54.6	216.5	01m46.9s
082°30.0'W	78°51.28'N	75°35.81'N	77°10.09'N	09:26:02	10.7	54.7	216.5	01m47.0s
082°22.5'W	78°53.39'N	75°38.15'N	77°12.34'N	09:26:04	10.7	54.8	216.6	01m47.0s
082°15.0'W	78°55.49'N	75°40.49'N	77°14.57'N	09:26:06	10.8	55.0	216.6	01m47.1s
082°07.5'W	78°57.57'N	75°42.81'N	77°16.79'N	09:26:08	10.8	55.1	216.6	01m47.2s
082°00.0'W	78°59.64'N	75°45.12'N	77°19.00'N	09:26:10	10.9	55.2	216.6	01m47.3s
081°52.5'W	79°01.70'N	75°47.42'N	77°21.20'N	09:26:11	10.9	55.4	216.7	01m47.4s
081°45.0'W	79°03.75'N	75°49.71'N	77°23.38'N	09:26:13	11.0	55.5	216.7	01m47.4s
081°37.5'W	79°05.79'N	75°51.99'N	77°25.56'N	09:26:15	11.0	55.6	216.7	01m47.5s
081°30.0'W	79°07.82'N	75°54.26'N	77°27.73'N	09:26:17	11.0	55.8	216.8	01m47.6s
081°22.5'W	79°09.84'N	75°56.52'N	77°29.88'N	09:26:18	11.1	55.9	216.8	01m47.7s
081°15.0'W	79°11.84'N	75°58.77'N	77°32.03'N	09:26:20	11.1	56.0	216.8	01m47.7s
081°07.5'W	79°13.84'N	76°01.01'N	77°34.16'N	09:26:22	11.2	56.2	216.9	01m47.8s
081°00.0'W	79°15.82'N	76°03.23'N	77°36.29'N	09:26:24	11.2	56.3	216.9	01m47.9s
080°52.5'W	79°17.79'N	76°05.45'N	77°38.40'N	09:26:26	11.3	56.4	216.9	01m47.9s
080°45.0'W	79°19.75'N	76°07.66'N	77°40.50'N	09:26:27	11.3	56.6	216.9	01m48.0s
080°37.5'W	79°21.70'N	76°09.86'N	77°42.59'N	09:26:29	11.4	56.7	217.0	01m48.1s
080°30.0'W	79°23.64'N	76°12.05'N	77°44.67'N	09:26:31	11.4	56.8	217.0	01m48.2s
080°22.5'W	79°25.57'N	76°14.23'N	77°46.75'N	09:26:33	11.4	57.0	217.0	01m48.2s
080°15.0'W	79°27.49'N	76°16.40'N	77°48.81'N	09:26:34	11.5	57.1	217.1	01m48.3s
080°07.5'W	79°29.40'N	76°18.55'N	77°50.86'N	09:26:36	11.5	57.2	217.1	01m48.4s
080°00.0'W	79°31.30'N	76°20.70'N	77°52.90'N	09:26:38	11.6	57.4	217.1	01m48.4s
079°52.5'W	79°33.18'N	76°22.84'N	77°54.93'N	09:26:40	11.6	57.5	217.1	01m48.5s
079°45.0'W	79°35.06'N	76°24.97'N	77°56.95'N	09:26:42	11.6	57.6	217.2	01m48.6s
079°37.5'W	79°36.93'N	76°27.09'N	77°58.96'N	09:26:43	11.7	57.7	217.2	01m48.7s
079°30.0'W	79°38.78'N	76°29.20'N	78°00.96'N	09:26:45	11.7	57.9	217.2	01m48.7s
079°22.5'W	79°40.63'N	76°31.30'N	78°02.94'N	09:26:47	11.8	58.0	217.3	01m48.8s
079°15.0'W	79°42.46'N	76°33.39'N	78°04.92'N	09:26:49	11.8	58.1	217.3	01m48.9s
079°07.5'W	79°44.29'N	76°35.47'N	78°06.89'N	09:26:50	11.8	58.3	217.3	01m48.9s
079°00.0'W	79°46.10'N	76°37.54'N	78°08.85'N	09:26:52	11.9	58.4	217.3	01m49.0s
078°52.5'W	79°47.91'N	76°39.60'N	78°10.80'N	09:26:54	11.9	58.5	217.4	01m49.1s
078°45.0'W	79°49.70'N	76°41.65'N	78°12.74'N	09:26:56	12.0	58.7	217.4	01m49.1s
078°37.5'W	79°51.49'N	76°43.69'N	78°14.67'N	09:26:57	12.0	58.8	217.4	01m49.2s
078°30.0'W	79°53.26'N	76°45.73'N	78°16.59'N	09:26:59	12.0	58.9	217.4	01m49.3s
078°22.5'W	79°55.03'N	76°47.75'N	78°18.50'N	09:27:01	12.1	59.1	217.5	01m49.3s
078°15.0'W	79°56.78'N	76°49.76'N	78°20.40'N	09:27:03	12.1	59.2	217.5	01m49.4s
078°00.0'W	80°00.26'N	76°53.76'N	78°24.17'N	09:27:06	12.2	59.5	217.5	01m49.5s
077°52.5'W	80°01.99'N	76°55.75'N	78°26.04'N	09:27:08	12.2	59.6	217.6	01m49.6s
077°45.0'W	80°03.70'N	76°57.72'N	78°27.91'N	09:27:10	12.3	59.7	217.6	01m49.7s
077°37.5'W	80°05.41'N	76°59.69'N	78°29.76'N	09:27:11	12.3	59.9	217.6	01m49.7s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
077°30.0'W	80°07.11'N	77°01.64'N	78°31.60'N	09:27:13	12.4	60.0	217.6	01m49.8s
077°22.5'W	80°08.80'N	77°03.59'N	78°33.43'N	09:27:15	12.4	60.1	217.7	01m49.9s
077°15.0'W	80°10.47'N	77°05.53'N	78°35.26'N	09:27:17	12.4	60.3	217.7	01m49.9s
077°07.5'W	80°12.14'N	77°07.46'N	78°37.07'N	09:27:18	12.5	60.4	217.7	01m50.0s
077°00.0'W	80°13.80'N	77°09.38'N	78°38.88'N	09:27:20	12.5	60.5	217.7	01m50.1s
076°52.5'W	80°15.45'N	77°11.29'N	78°40.68'N	09:27:22	12.5	60.7	217.7	01m50.1s
076°45.0'W	80°17.10'N	77°13.20'N	78°42.46'N	09:27:24	12.6	60.8	217.8	01m50.2s
076°37.5'W	80°18.73'N	77°15.09'N	78°44.24'N	09:27:25	12.6	60.9	217.8	01m50.3s
076°30.0'W	80°20.35'N	77°16.97'N	78°46.01'N	09:27:27	12.7	61.1	217.8	01m50.3s
076°22.5'W	80°21.97'N	77°18.85'N	78°47.77'N	09:27:29	12.7	61.2	217.8	01m50.4s
076°15.0'W	80°23.57'N	77°20.72'N	78°49.52'N	09:27:31	12.7	61.3	217.9	01m50.4s
076°07.5'W	80°25.17'N	77°22.58'N	78°51.26'N	09:27:32	12.8	61.5	217.9	01m50.5s
076°00.0'W	80°26.75'N	77°24.42'N	78°52.99'N	09:27:34	12.8	61.6	217.9	01m50.6s
075°52.5'W	80°28.33'N	77°26.26'N	78°54.72'N	09:27:36	12.8	61.7	217.9	01m50.6s
075°45.0'W	80°29.90'N	77°28.10'N	78°56.43'N	09:27:37	12.9	61.9	217.9	01m50.7s
075°37.5'W	80°31.46'N	77°29.92'N	78°58.14'N	09:27:39	12.9	62.0	218.0	01m50.8s
075°30.0'W	80°33.01'N	77°31.73'N	78°59.84'N	09:27:41	12.9	62.1	218.0	01m50.8s
075°22.5'W	80°34.56'N	77°33.54'N	79°01.53'N	09:27:43	13.0	62.3	218.0	01m50.9s
075°15.0'W	80°36.09'N	77°35.33'N	79°03.21'N	09:27:44	13.0	62.4	218.0	01m50.9s
075°07.5'W	80°37.62'N	77°37.12'N	79°04.88'N	09:27:46	13.1	62.5	218.1	01m51.0s
075°00.0'W	80°39.14'N	77°38.90'N	79°06.54'N	09:27:48	13.1	62.7	218.1	01m51.1s
074°52.5'W	80°40.65'N	77°40.67'N	79°08.20'N	09:27:49	13.1	62.8	218.1	01m51.1s
074°45.0'W	80°42.15'N	77°42.44'N	79°09.84'N	09:27:51	13.2	62.9	218.1	01m51.2s
074°37.5'W	80°43.64'N	77°44.19'N	79°11.48'N	09:27:53	13.2	63.1	218.1	01m51.2s
074°30.0'W	80°45.13'N	77°45.94'N	79°13.11'N	09:27:54	13.2	63.2	218.2	01m51.3s
074°22.5'W	80°46.60'N	77°47.67'N	79°14.73'N	09:27:56	13.3	63.3	218.2	01m51.4s
074°15.0'W	80°48.07'N	77°49.40'N	79°16.34'N	09:27:58	13.3	63.4	218.2	01m51.4s
074°07.5'W	80°49.53'N	77°51.12'N	79°17.94'N	09:28:00	13.3	63.6	218.2	01m51.5s
074°00.0'W	80°50.98'N	77°52.84'N	79°19.54'N	09:28:01	13.4	63.7	218.2	01m51.5s
073°52.5'W	80°52.43'N	77°54.54'N	79°21.13'N	09:28:03	13.4	63.8	218.3	01m51.6s
073°45.0'W	80°53.86'N	77°56.24'N	79°22.71'N	09:28:05	13.4	64.0	218.3	01m51.6s
073°37.5'W	80°55.29'N	77°57.92'N	79°24.28'N	09:28:06	13.5	64.1	218.3	01m51.7s
073°30.0'W	80°56.71'N	77°59.60'N	79°25.84'N	09:28:08	13.5	64.2	218.3	01m51.8s
073°22.5'W	80°58.12'N	78°01.27'N	79°27.40'N	09:28:10	13.5	64.4	218.3	01m51.8s
073°15.0'W	80°59.53'N	78°02.94'N	79°28.94'N	09:28:11	13.6	64.5	218.4	01m51.9s
073°07.5'W	81°00.92'N	78°04.59'N	79°30.48'N	09:28:13	13.6	64.6	218.4	01m51.9s
073°00.0'W	81°02.31'N	78°06.24'N	79°32.01'N	09:28:15	13.6	64.8	218.4	01m52.0s
072°52.5'W	81°03.69'N	78°07.88'N	79°33.54'N	09:28:16	13.7	64.9	218.4	01m52.0s
072°45.0'W	81°05.07'N	78°09.51'N	79°35.05'N	09:28:18	13.7	65.0	218.4	01m52.1s
072°37.5'W	81°06.43'N	78°11.14'N	79°36.56'N	09:28:20	13.7	65.2	218.4	01m52.2s
072°30.0'W	81°07.79'N	78°12.75'N	79°38.06'N	09:28:21	13.8	65.3	218.5	01m52.2s
072°22.5'W	81°09.14'N	78°14.36'N	79°39.55'N	09:28:23	13.8	65.4	218.5	01m52.3s
072°15.0'W	81°10.48'N	78°15.96'N	79°41.03'N	09:28:24	13.8	65.6	218.5	01m52.3s
072°07.5'W	81°11.82'N	78°17.55'N	79°42.51'N	09:28:26	13.9	65.7	218.5	01m52.4s
072°00.0'W	81°13.15'N	78°19.14'N	79°43.98'N	09:28:28	13.9	65.8	218.5	01m52.4s
071°52.5'W	81°14.47'N	78°20.71'N	79°45.44'N	09:28:29	13.9	66.0	218.6	01m52.5s
071°45.0'W	81°15.78'N	78°22.28'N	79°46.89'N	09:28:31	13.9	66.1	218.6	01m52.5s
071°37.5'W	81°17.09'N	78°23.85'N	79°48.34'N	09:28:33	14.0	66.2	218.6	01m52.6s
071°30.0'W	81°18.39'N	78°25.40'N	79°49.78'N	09:28:34	14.0	66.4	218.6	01m52.6s
071°22.5'W	81°19.68'N	78°26.95'N	79°51.21'N	09:28:36	14.0	66.5	218.6	01m52.7s
071°15.0'W	81°20.96'N	78°28.49'N	79°52.63'N	09:28:38	14.1	66.6	218.6	01m52.8s
071°07.5'W	81°22.24'N	78°30.02'N	79°54.05'N	09:28:39	14.1	66.8	218.7	01m52.8s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
071°00.0'W	81°23.51'N	78°31.54'N	79°55.46'N	09:28:41	14.1	66.9	218.7	01m52.9s
070°52.5'W	81°24.78'N	78°33.06'N	79°56.86'N	09:28:42	14.2	67.0	218.7	01m52.9s
070°45.0'W	81°26.03'N	78°34.57'N	79°58.25'N	09:28:44	14.2	67.2	218.7	01m53.0s
070°37.5'W	81°27.28'N	78°36.07'N	79°59.64'N	09:28:46	14.2	67.3	218.7	01m53.0s
070°30.0'W	81°28.53'N	78°37.56'N	80°01.02'N	09:28:47	14.2	67.4	218.7	01m53.1s
070°22.5'W	81°29.76'N	78°39.05'N	80°02.40'N	09:28:49	14.3	67.6	218.8	01m53.1s
070°15.0'W	81°30.99'N	78°40.53'N	80°03.76'N	09:28:50	14.3	67.7	218.8	01m53.2s
070°07.5'W	81°32.21'N	78°42.01'N	80°05.12'N	09:28:52	14.3	67.8	218.8	01m53.2s
070°00.0'W	81°33.43'N	78°43.47'N	80°06.47'N	09:28:54	14.4	68.0	218.8	01m53.3s
069°52.5'W	81°34.64'N	78°44.93'N	80°07.82'N	09:28:55	14.4	68.1	218.8	01m53.3s
069°45.0'W	81°35.84'N	78°46.38'N	80°09.16'N	09:28:57	14.4	68.2	218.8	01m53.4s
069°37.5'W	81°37.04'N	78°47.83'N	80°10.49'N	09:28:58	14.5	68.4	218.9	01m53.4s
069°30.0'W	81°38.23'N	78°49.26'N	80°11.81'N	09:29:00	14.5	68.5	218.9	01m53.5s
069°22.5'W	81°39.41'N	78°50.69'N	80°13.13'N	09:29:02	14.5	68.6	218.9	01m53.5s
069°15.0'W	81°40.59'N	78°52.12'N	80°14.44'N	09:29:03	14.5	68.8	218.9	01m53.6s
069°07.5'W	81°41.76'N	78°53.53'N	80°15.74'N	09:29:05	14.6	68.9	218.9	01m53.6s
069°00.0'W	81°42.92'N	78°54.94'N	80°17.04'N	09:29:06	14.6	69.0	218.9	01m53.7s
068°52.5'W	81°44.08'N	78°56.35'N	80°18.33'N	09:29:08	14.6	69.2	219.0	01m53.7s
068°45.0'W	81°45.23'N	78°57.74'N	80°19.61'N	09:29:09	14.7	69.3	219.0	01m53.8s
068°37.5'W	81°46.37'N	78°59.13'N	80°20.89'N	09:29:11	14.7	69.4	219.0	01m53.8s
068°30.0'W	81°47.51'N	79°00.51'N	80°22.16'N	09:29:13	14.7	69.6	219.0	01m53.9s
068°22.5'W	81°48.64'N	79°01.89'N	80°23.42'N	09:29:14	14.7	69.7	219.0	01m53.9s
068°15.0'W	81°49.77'N	79°03.26'N	80°24.68'N	09:29:16	14.8	69.8	219.0	01m54.0s
068°07.5'W	81°50.89'N	79°04.62'N	80°25.93'N	09:29:17	14.8	70.0	219.0	01m54.0s
068°00.0'W	81°52.00'N	79°05.97'N	80°27.18'N	09:29:19	14.8	70.1	219.1	01m54.1s
067°52.5'W	81°53.11'N	79°07.32'N	80°28.41'N	09:29:20	14.9	70.2	219.1	01m54.1s
067°45.0'W	81°54.21'N	79°08.66'N	80°29.64'N	09:29:22	14.9	70.4	219.1	01m54.2s
067°37.5'W	81°55.31'N	79°10.00'N	80°30.87'N	09:29:24	14.9	70.5	219.1	01m54.2s
067°30.0'W	81°56.39'N	79°11.33'N	80°32.09'N	09:29:25	14.9	70.6	219.1	01m54.3s
067°22.5'W	81°57.48'N	79°12.65'N	80°33.30'N	09:29:27	15.0	70.8	219.1	01m54.3s
067°15.0'W	81°58.56'N	79°13.97'N	80°34.51'N	09:29:28	15.0	70.9	219.1	01m54.4s
067°07.5'W	81°59.63'N	79°15.28'N	80°35.71'N	09:29:30	15.0	71.0	219.2	01m54.4s
067°00.0'W	82°00.69'N	79°16.58'N	80°36.90'N	09:29:31	15.0	71.2	219.2	01m54.4s
066°52.5'W	82°01.75'N	79°17.87'N	80°38.09'N	09:29:33	15.1	71.3	219.2	01m54.5s
066°45.0'W	82°02.81'N	79°19.17'N	80°39.27'N	09:29:34	15.1	71.4	219.2	01m54.5s
066°37.5'W	82°03.86'N	79°20.45'N	80°40.45'N	09:29:36	15.1	71.6	219.2	01m54.6s
066°30.0'W	82°04.90'N	79°21.73'N	80°41.61'N	09:29:37	15.1	71.7	219.2	01m54.6s
066°22.5'W	82°05.94'N	79°23.00'N	80°42.78'N	09:29:39	15.2	71.8	219.2	01m54.7s
066°15.0'W	82°06.97'N	79°24.26'N	80°43.94'N	09:29:40	15.2	72.0	219.3	01m54.7s
066°07.5'W	82°07.99'N	79°25.52'N	80°45.09'N	09:29:42	15.2	72.1	219.3	01m54.8s
066°00.0'W	82°09.01'N	79°26.77'N	80°46.23'N	09:29:43	15.3	72.2	219.3	01m54.8s
065°52.5'W	82°10.03'N	79°28.02'N	80°47.37'N	09:29:45	15.3	72.3	219.3	01m54.9s
065°45.0'W	82°11.04'N	79°29.26'N	80°48.50'N	09:29:46	15.3	72.5	219.3	01m54.9s
065°37.5'W	82°12.04'N	79°30.49'N	80°49.63'N	09:29:48	15.3	72.6	219.3	01m55.0s
065°30.0'W	82°13.04'N	79°31.72'N	80°50.75'N	09:29:49	15.4	72.7	219.3	01m55.0s
065°22.5'W	82°14.03'N	79°32.94'N	80°51.87'N	09:29:51	15.4	72.9	219.4	01m55.0s
065°15.0'W	82°15.02'N	79°34.16'N	80°52.98'N	09:29:52	15.4	73.0	219.4	01m55.1s
065°07.5'W	82°16.00'N	79°35.37'N	80°54.08'N	09:29:54	15.4	73.1	219.4	01m55.1s
065°00.0'W	82°16.98'N	79°36.57'N	80°55.18'N	09:29:55	15.5	73.3	219.4	01m55.2s
064°52.5'W	82°17.95'N	79°37.77'N	80°56.28'N	09:29:57	15.5	73.4	219.4	01m55.2s
064°45.0'W	82°18.92'N	79°38.96'N	80°57.36'N	09:29:58	15.5	73.5	219.4	01m55.3s
064°37.5'W	82°19.88'N	79°40.15'N	80°58.45'N	09:30:00	15.5	73.7	219.4	01m55.3s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
064°30.0'W	82°20.84'N	79°41.33'N	80°59.52'N	09:30:01	15.6	73.8	219.4	01m55.3s
064°22.5'W	82°21.79'N	79°42.51'N	81°00.59'N	09:30:03	15.6	73.9	219.5	01m55.4s
064°15.0'W	82°22.73'N	79°43.67'N	81°01.66'N	09:30:04	15.6	74.1	219.5	01m55.4s
064°07.5'W	82°23.67'N	79°44.84'N	81°02.72'N	09:30:06	15.6	74.2	219.5	01m55.5s
064°00.0'W	82°24.61'N	79°46.00'N	81°03.77'N	09:30:07	15.7	74.3	219.5	01m55.5s
063°52.5'W	82°25.54'N	79°47.15'N	81°04.82'N	09:30:09	15.7	74.5	219.5	01m55.6s
063°45.0'W	82°26.46'N	79°48.29'N	81°05.87'N	09:30:10	15.7	74.6	219.5	01m55.6s
063°37.5'W	82°27.38'N	79°49.43'N	81°06.90'N	09:30:11	15.7	74.7	219.5	01m55.6s
063°30.0'W	82°28.30'N	79°50.57'N	81°07.94'N	09:30:13	15.7	74.9	219.5	01m55.7s
063°22.5'W	82°29.21'N	79°51.70'N	81°08.96'N	09:30:14	15.8	75.0	219.6	01m55.7s
063°15.0'W	82°30.12'N	79°52.82'N	81°09.99'N	09:30:16	15.8	75.1	219.6	01m55.8s
063°07.5'W	82°31.02'N	79°53.94'N	81°11.00'N	09:30:17	15.8	75.3	219.6	01m55.8s
063°00.0'W	82°31.91'N	79°55.05'N	81°12.01'N	09:30:19	15.8	75.4	219.6	01m55.9s
062°52.5'W	82°32.80'N	79°56.16'N	81°13.02'N	09:30:20	15.9	75.5	219.6	01m55.9s
062°45.0'W	82°33.69'N	79°57.26'N	81°14.02'N	09:30:22	15.9	75.7	219.6	01m55.9s
062°37.5'W	82°34.57'N	79°58.35'N	81°15.02'N	09:30:23	15.9	75.8	219.6	01m56.0s
062°30.0'W	82°35.45'N	79°59.45'N	81°16.01'N	09:30:24	15.9	75.9	219.6	01m56.0s
062°22.5'W	82°36.32'N	80°00.53'N	81°16.99'N	09:30:26	16.0	76.1	219.7	01m56.1s
062°15.0'W	82°37.19'N	80°01.61'N	81°17.98'N	09:30:27	16.0	76.2	219.7	01m56.1s
062°07.5'W	82°38.05'N	80°02.68'N	81°18.95'N	09:30:29	16.0	76.3	219.7	01m56.1s
062°00.0'W	82°38.91'N	80°03.75'N	81°19.92'N	09:30:30	16.0	76.5	219.7	01m56.2s
061°52.5'W	82°39.76'N	80°04.82'N	81°20.89'N	09:30:32	16.1	76.6	219.7	01m56.2s
061°45.0'W	82°40.61'N	80°05.88'N	81°21.85'N	09:30:33	16.1	76.7	219.7	01m56.3s
061°37.5'W	82°41.45'N	80°06.93'N	81°22.80'N	09:30:34	16.1	76.9	219.7	01m56.3s
061°30.0'W	82°42.29'N	80°07.98'N	81°23.75'N	09:30:36	16.1	77.0	219.7	01m56.3s
061°22.5'W	82°43.13'N	80°09.02'N	81°24.70'N	09:30:37	16.1	77.1	219.7	01m56.4s
061°15.0'W	82°43.96'N	80°10.06'N	81°25.64'N	09:30:39	16.2	77.3	219.8	01m56.4s
061°07.5'W	82°44.79'N	80°11.09'N	81°26.58'N	09:30:40	16.2	77.4	219.8	01m56.5s
061°00.0'W	82°45.61'N	80°12.12'N	81°27.51'N	09:30:41	16.2	77.5	219.8	01m56.5s
060°52.5'W	82°46.43'N	80°13.14'N	81°28.44'N	09:30:43	16.2	77.7	219.8	01m56.5s
060°45.0'W	82°47.24'N	80°14.16'N	81°29.36'N	09:30:44	16.3	77.8	219.8	01m56.6s
060°37.5'W	82°48.05'N	80°15.17'N	81°30.27'N	09:30:46	16.3	77.9	219.8	01m56.6s
060°30.0'W	82°48.85'N	80°16.18'N	81°31.19'N	09:30:47	16.3	78.1	219.8	01m56.7s
060°22.5'W	82°49.65'N	80°17.18'N	81°32.09'N	09:30:48	16.3	78.2	219.8	01m56.7s
060°15.0'W	82°50.45'N	80°18.18'N	81°33.00'N	09:30:50	16.3	78.3	219.8	01m56.7s
060°07.5'W	82°51.24'N	80°19.17'N	81°33.89'N	09:30:51	16.4	78.5	219.9	01m56.8s
060°00.0'W	82°52.03'N	80°20.16'N	81°34.79'N	09:30:53	16.4	78.6	219.9	01m56.8s
059°52.5'W	82°52.81'N	80°21.14'N	81°35.68'N	09:30:54	16.4	78.7	219.9	01m56.9s
059°45.0'W	82°53.59'N	80°22.11'N	81°36.56'N	09:30:55	16.4	78.8	219.9	01m56.9s
059°37.5'W	82°54.36'N	80°23.09'N	81°37.44'N	09:30:57	16.5	79.0	219.9	01m56.9s
059°30.0'W	82°55.13'N	80°24.06'N	81°38.32'N	09:30:58	16.5	79.1	219.9	01m57.0s
059°22.5'W	82°55.90'N	80°25.02'N	81°39.19'N	09:30:59	16.5	79.2	219.9	01m57.0s
059°15.0'W	82°56.66'N	80°25.98'N	81°40.05'N	09:31:01	16.5	79.4	219.9	01m57.0s
059°07.5'W	82°57.42'N	80°26.93'N	81°40.92'N	09:31:02	16.5	79.5	219.9	01m57.1s
059°00.0'W	82°58.18'N	80°27.88'N	81°41.77'N	09:31:03	16.6	79.6	220.0	01m57.1s
058°52.5'W	82°58.93'N	80°28.82'N	81°42.63'N	09:31:05	16.6	79.8	220.0	01m57.2s
058°45.0'W	82°59.67'N	80°29.76'N	81°43.47'N	09:31:06	16.6	79.9	220.0	01m57.2s
058°37.5'W	83°00.41'N	80°30.69'N	81°44.32'N	09:31:08	16.6	80.0	220.0	01m57.2s
058°30.0'W	83°01.15'N	80°31.62'N	81°45.16'N	09:31:09	16.6	80.2	220.0	01m57.3s
058°22.5'W	83°01.89'N	80°32.55'N	81°45.99'N	09:31:10	16.7	80.3	220.0	01m57.3s
058°15.0'W	83°02.62'N	80°33.47'N	81°46.82'N	09:31:12	16.7	80.4	220.0	01m57.3s
058°07.5'W	83°03.34'N	80°34.39'N	81°47.65'N	09:31:13	16.7	80.6	220.0	01m57.4s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
058°00.0'W	83°04.07'N	80°35.30'N	81°48.47'N	09:31:14	16.7	80.7	220.0	01m57.4s
057°52.5'W	83°04.78'N	80°36.20'N	81°49.29'N	09:31:16	16.7	80.8	220.0	01m57.4s
057°45.0'W	83°05.50'N	80°37.10'N	81°50.11'N	09:31:17	16.8	81.0	220.1	01m57.5s
057°37.5'W	83°06.21'N	80°38.00'N	81°50.92'N	09:31:18	16.8	81.1	220.1	01m57.5s
057°30.0'W	83°06.92'N	80°38.90'N	81°51.72'N	09:31:20	16.8	81.2	220.1	01m57.6s
057°22.5'W	83°07.62'N	80°39.78'N	81°52.52'N	09:31:21	16.8	81.4	220.1	01m57.6s
057°15.0'W	83°08.32'N	80°40.67'N	81°53.32'N	09:31:22	16.8	81.5	220.1	01m57.6s
057°07.5'W	83°09.02'N	80°41.55'N	81°54.11'N	09:31:24	16.9	81.6	220.1	01m57.7s
057°00.0'W	83°09.71'N	80°42.42'N	81°54.90'N	09:31:25	16.9	81.8	220.1	01m57.7s
056°52.5'W	83°10.40'N	80°43.29'N	81°55.69'N	09:31:26	16.9	81.9	220.1	01m57.7s
056°45.0'W	83°11.08'N	80°44.16'N	81°56.47'N	09:31:28	16.9	82.0	220.1	01m57.8s
056°37.5'W	83°11.76'N	80°45.02'N	81°57.25'N	09:31:29	16.9	82.2	220.1	01m57.8s
056°30.0'W	83°12.44'N	80°45.88'N	81°58.02'N	09:31:30	17.0	82.3	220.2	01m57.8s
056°22.5'W	83°13.11'N	80°46.73'N	81°58.79'N	09:31:32	17.0	82.4	220.2	01m57.9s
056°15.0'W	83°13.78'N	80°47.58'N	81°59.55'N	09:31:33	17.0	82.6	220.2	01m57.9s
056°07.5'W	83°14.45'N	80°48.43'N	82°00.31'N	09:31:34	17.0	82.7	220.2	01m57.9s
056°00.0'W	83°15.11'N	80°49.27'N	82°01.07'N	09:31:35	17.0	82.8	220.2	01m58.0s
055°52.5'W	83°15.77'N	80°50.11'N	82°01.82'N	09:31:37	17.1	83.0	220.2	01m58.0s
055°45.0'W	83°16.43'N	80°50.94'N	82°02.57'N	09:31:38	17.1	83.1	220.2	01m58.0s
055°37.5'W	83°17.08'N	80°51.77'N	82°03.32'N	09:31:39	17.1	83.2	220.2	01m58.1s
055°30.0'W	83°17.73'N	80°52.59'N	82°04.06'N	09:31:41	17.1	83.4	220.2	01m58.1s
055°22.5'W	83°18.38'N	80°53.41'N	82°04.80'N	09:31:42	17.1	83.5	220.2	01m58.2s
055°15.0'W	83°19.02'N	80°54.22'N	82°05.53'N	09:31:43	17.2	83.6	220.2	01m58.2s
055°07.5'W	83°19.66'N	80°55.04'N	82°06.26'N	09:31:45	17.2	83.7	220.3	01m58.2s
055°00.0'W	83°20.29'N	80°55.84'N	82°06.98'N	09:31:46	17.2	83.9	220.3	01m58.3s
054°52.5'W	83°20.93'N	80°56.65'N	82°07.71'N	09:31:47	17.2	84.0	220.3	01m58.3s
054°45.0'W	83°21.55'N	80°57.45'N	82°08.43'N	09:31:48	17.2	84.1	220.3	01m58.3s
054°37.5'W	83°22.18'N	80°58.24'N	82°09.14'N	09:31:50	17.3	84.3	220.3	01m58.4s
054°30.0'W	83°22.80'N	80°59.03'N	82°09.85'N	09:31:51	17.3	84.4	220.3	01m58.4s
054°22.5'W	83°23.42'N	80°59.82'N	82°10.56'N	09:31:52	17.3	84.5	220.3	01m58.4s
054°15.0'W	83°24.03'N	81°00.60'N	82°11.26'N	09:31:54	17.3	84.7	220.3	01m58.5s
054°07.5'W	83°24.65'N	81°01.38'N	82°11.96'N	09:31:55	17.3	84.8	220.3	01m58.5s
054°00.0'W	83°25.25'N	81°02.16'N	82°12.66'N	09:31:56	17.4	84.9	220.3	01m58.5s
053°52.5'W	83°25.86'N	81°02.93'N	82°13.35'N	09:31:57	17.4	85.1	220.3	01m58.6s
053°45.0'W	83°26.46'N	81°03.69'N	82°14.04'N	09:31:59	17.4	85.2	220.4	01m58.6s
053°37.5'W	83°27.06'N	81°04.46'N	82°14.73'N	09:32:00	17.4	85.3	220.4	01m58.6s
053°30.0'W	83°27.66'N	81°05.22'N	82°15.41'N	09:32:01	17.4	85.5	220.4	01m58.7s
053°22.5'W	83°28.25'N	81°05.97'N	82°16.08'N	09:32:02	17.4	85.6	220.4	01m58.7s
053°15.0'W	83°28.84'N	81°06.72'N	82°16.76'N	09:32:04	17.5	85.7	220.4	01m58.7s
053°07.5'W	83°29.42'N	81°07.47'N	82°17.43'N	09:32:05	17.5	85.9	220.4	01m58.7s
053°00.0'W	83°30.01'N	81°08.21'N	82°18.10'N	09:32:06	17.5	86.0	220.4	01m58.8s
052°52.5'W	83°30.59'N	81°08.95'N	82°18.76'N	09:32:07	17.5	86.1	220.4	01m58.8s
052°45.0'W	83°31.16'N	81°09.69'N	82°19.42'N	09:32:09	17.5	86.3	220.4	01m58.8s
052°37.5'W	83°31.74'N	81°10.42'N	82°20.08'N	09:32:10	17.6	86.4	220.4	01m58.9s
052°30.0'W	83°32.31'N	81°11.15'N	82°20.73'N	09:32:11	17.6	86.5	220.4	01m58.9s
052°22.5'W	83°32.87'N	81°11.88'N	82°21.38'N	09:32:12	17.6	86.7	220.5	01m58.9s
052°15.0'W	83°33.44'N	81°12.60'N	82°22.03'N	09:32:14	17.6	86.8	220.5	01m59.0s
052°07.5'W	83°34.00'N	81°13.32'N	82°22.67'N	09:32:15	17.6	86.9	220.5	01m59.0s
052°00.0'W	83°34.56'N	81°14.03'N	82°23.31'N	09:32:16	17.6	87.1	220.5	01m59.0s
051°52.5'W	83°35.11'N	81°14.74'N	82°23.95'N	09:32:17	17.7	87.2	220.5	01m59.1s
051°45.0'W	83°35.66'N	81°15.45'N	82°24.58'N	09:32:19	17.7	87.3	220.5	01m59.1s
051°37.5'W	83°36.21'N	81°16.15'N	82°25.21'N	09:32:20	17.7	87.4	220.5	01m59.1s



Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
051°30.0'W	83°36.76'N	81°16.85'N	82°25.84'N	09:32:21	17.7	87.6	220.5	01m59.2s
051°22.5'W	83°37.30'N	81°17.54'N	82°26.46'N	09:32:22	17.7	87.7	220.5	01m59.2s
051°15.0'W	83°37.84'N	81°18.24'N	82°27.08'N	09:32:24	17.7	87.8	220.5	01m59.2s
051°07.5'W	83°38.38'N	81°18.92'N	82°27.70'N	09:32:25	17.8	88.0	220.5	01m59.3s
051°00.0'W	83°38.91'N	81°19.61'N	82°28.31'N	09:32:26	17.8	88.1	220.5	01m59.3s
050°52.5'W	83°39.45'N	81°20.29'N	82°28.92'N	09:32:27	17.8	88.2	220.6	01m59.3s
050°45.0'W	83°39.97'N	81°20.97'N	82°29.53'N	09:32:28	17.8	88.4	220.6	01m59.3s
050°37.5'W	83°40.50'N	81°21.64'N	82°30.13'N	09:32:30	17.8	88.5	220.6	01m59.4s
050°30.0'W	83°41.02'N	81°22.31'N	82°30.73'N	09:32:31	17.9	88.6	220.6	01m59.4s
050°22.5'W	83°41.54'N	81°22.98'N	82°31.33'N	09:32:32	17.9	88.8	220.6	01m59.4s
050°15.0'W	83°42.06'N	81°23.64'N	82°31.93'N	09:32:33	17.9	88.9	220.6	01m59.5s
050°07.5'W	83°42.57'N	81°24.30'N	82°32.52'N	09:32:35	17.9	89.0	220.6	01m59.5s
050°00.0'W	83°43.09'N	81°24.96'N	82°33.10'N	09:32:36	17.9	89.2	220.6	01m59.5s
049°52.5'W	83°43.60'N	81°25.61'N	82°33.69'N	09:32:37	17.9	89.3	220.6	01m59.6s
049°45.0'W	83°44.10'N	81°26.26'N	82°34.27'N	09:32:38	18.0	89.4	220.6	01m59.6s
049°37.5'W	83°44.60'N	81°26.91'N	82°34.85'N	09:32:39	18.0	89.6	220.6	01m59.6s
049°30.0'W	83°45.10'N	81°27.55'N	82°35.42'N	09:32:41	18.0	89.7	220.6	01m59.7s
049°22.5'W	83°45.60'N	81°28.19'N	82°36.00'N	09:32:42	18.0	89.8	220.6	01m59.7s
049°15.0'W	83°46.10'N	81°28.83'N	82°36.56'N	09:32:43	18.0	90.0	220.7	01m59.7s
049°07.5'W	83°46.59'N	81°29.46'N	82°37.13'N	09:32:44	18.0	90.1	220.7	01m59.7s
049°00.0'W	83°47.08'N	81°30.09'N	82°37.69'N	09:32:45	18.1	90.2	220.7	01m59.8s
048°52.5'W	83°47.57'N	81°30.72'N	82°38.25'N	09:32:47	18.1	90.4	220.7	01m59.8s
048°45.0'W	83°48.05'N	81°31.34'N	82°38.81'N	09:32:48	18.1	90.5	220.7	01m59.8s
048°37.5'W	83°48.53'N	81°31.96'N	82°39.36'N	09:32:49	18.1	90.6	220.7	01m59.9s
048°30.0'W	83°49.01'N	81°32.58'N	82°39.92'N	09:32:50	18.1	90.7	220.7	01m59.9s
048°22.5'W	83°49.49'N	81°33.19'N	82°40.46'N	09:32:51	18.1	90.9	220.7	01m59.9s
048°15.0'W	83°49.96'N	81°33.80'N	82°41.01'N	09:32:52	18.2	91.0	220.7	01m59.9s
048°07.5'W	83°50.43'N	81°34.41'N	82°41.55'N	09:32:54	18.2	91.1	220.7	02m00.0s
048°00.0'W	83°50.90'N	81°35.01'N	82°42.09'N	09:32:55	18.2	91.3	220.7	02m00.0s
047°52.5'W	83°51.36'N	81°35.61'N	82°42.62'N	09:32:56	18.2	91.4	220.7	02m00.0s
047°45.0'W	83°51.83'N	81°36.20'N	82°43.16'N	09:32:57	18.2	91.5	220.7	02m00.1s
047°37.5'W	83°52.29'N	81°36.80'N	82°43.69'N	09:32:58	18.2	91.7	220.8	02m00.1s
047°30.0'W	83°52.75'N	81°37.39'N	82°44.21'N	09:33:00	18.3	91.8	220.8	02m00.1s
047°22.5'W	83°53.20'N	81°37.98'N	82°44.74'N	09:33:01	18.3	91.9	220.8	02m00.2s
047°15.0'W	83°53.66'N	81°38.56'N	82°45.26'N	09:33:02	18.3	92.1	220.8	02m00.2s
047°07.5'W	83°54.11'N	81°39.14'N	82°45.78'N	09:33:03	18.3	92.2	220.8	02m00.2s
047°00.0'W	83°54.55'N	81°39.72'N	82°46.30'N	09:33:04	18.3	92.3	220.8	02m00.2s
046°52.5'W	83°55.00'N	81°40.29'N	82°46.81'N	09:33:05	18.3	92.5	220.8	02m00.3s
046°45.0'W	83°55.44'N	81°40.87'N	82°47.32'N	09:33:07	18.3	92.6	220.8	02m00.3s
046°37.5'W	83°55.88'N	81°41.43'N	82°47.83'N	09:33:08	18.4	92.7	220.8	02m00.3s
046°30.0'W	83°56.32'N	81°42.00'N	82°48.33'N	09:33:09	18.4	92.9	220.8	02m00.4s
046°22.5'W	83°56.76'N	81°42.56'N	82°48.83'N	09:33:10	18.4	93.0	220.8	02m00.4s
046°15.0'W	83°57.19'N	81°43.12'N	82°49.33'N	09:33:11	18.4	93.1	220.8	02m00.4s
046°07.5'W	83°57.62'N	81°43.68'N	82°49.83'N	09:33:12	18.4	93.3	220.8	02m00.4s
046°00.0'W	83°58.05'N	81°44.23'N	82°50.32'N	09:33:14	18.4	93.4	220.9	02m00.5s
045°52.5'W	83°58.47'N	81°44.78'N	82°50.81'N	09:33:15	18.5	93.5	220.9	02m00.5s
045°45.0'W	83°58.90'N	81°45.33'N	82°51.30'N	09:33:16	18.5	93.6	220.9	02m00.5s
045°37.5'W	83°59.32'N	81°45.87'N	82°51.79'N	09:33:17	18.5	93.8	220.9	02m00.5s
045°30.0'W	83°59.74'N	81°46.41'N	82°52.27'N	09:33:18	18.5	93.9	220.9	02m00.6s
045°22.5'W	84°00.15'N	81°46.95'N	82°52.75'N	09:33:19	18.5	94.0	220.9	02m00.6s
045°15.0'W	84°00.57'N	81°47.49'N	82°53.23'N	09:33:21	18.5	94.2	220.9	02m00.6s
045°07.5'W	84°00.98'N	81°48.02'N	82°53.70'N	09:33:22	18.6	94.3	220.9	02m00.7s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
045°00.0'W	84°01.39'N	81°48.55'N	82°54.17'N	09:33:23	18.6	94.4	220.9	02m00.7s
044°52.5'W	84°01.79'N	81°49.07'N	82°54.64'N	09:33:24	18.6	94.6	220.9	02m00.7s
044°45.0'W	84°02.20'N	81°49.60'N	82°55.11'N	09:33:25	18.6	94.7	220.9	02m00.7s
044°37.5'W	84°02.60'N	81°50.12'N	82°55.57'N	09:33:26	18.6	94.8	220.9	02m00.8s
044°30.0'W	84°03.00'N	81°50.63'N	82°56.03'N	09:33:27	18.6	95.0	220.9	02m00.8s
044°22.5'W	84°03.40'N	81°51.15'N	82°56.49'N	09:33:29	18.6	95.1	220.9	02m00.8s
044°15.0'W	84°03.79'N	81°51.66'N	82°56.95'N	09:33:30	18.7	95.2	221.0	02m00.8s
044°07.5'W	84°04.19'N	81°52.17'N	82°57.40'N	09:33:31	18.7	95.4	221.0	02m00.9s
044°00.0'W	84°04.58'N	81°52.68'N	82°57.85'N	09:33:32	18.7	95.5	221.0	02m00.9s
043°52.5'W	84°04.96'N	81°53.18'N	82°58.30'N	09:33:33	18.7	95.6	221.0	02m00.9s
043°45.0'W	84°05.35'N	81°53.68'N	82°58.75'N	09:33:34	18.7	95.8	221.0	02m01.0s
043°37.5'W	84°05.73'N	81°54.18'N	82°59.19'N	09:33:35	18.7	95.9	221.0	02m01.0s
043°30.0'W	84°06.12'N	81°54.67'N	82°59.63'N	09:33:36	18.7	96.0	221.0	02m01.0s
043°22.5'W	84°06.50'N	81°55.16'N	83°00.07'N	09:33:38	18.8	96.2	221.0	02m01.0s
043°15.0'W	84°06.87'N	81°55.65'N	83°00.50'N	09:33:39	18.8	96.3	221.0	02m01.1s
043°07.5'W	84°07.25'N	81°56.14'N	83°00.94'N	09:33:40	18.8	96.4	221.0	02m01.1s
043°00.0'W	84°07.62'N	81°56.62'N	83°01.37'N	09:33:41	18.8	96.5	221.0	02m01.1s
042°52.5'W	84°07.99'N	81°57.10'N	83°01.79'N	09:33:42	18.8	96.7	221.0	02m01.1s
042°45.0'W	84°08.36'N	81°57.58'N	83°02.22'N	09:33:43	18.8	96.8	221.0	02m01.2s
042°37.5'W	84°08.73'N	81°58.06'N	83°02.64'N	09:33:44	18.9	96.9	221.0	02m01.2s
042°30.0'W	84°09.09'N	81°58.53'N	83°03.06'N	09:33:45	18.9	97.1	221.0	02m01.2s
042°22.5'W	84°09.45'N	81°59.00'N	83°03.48'N	09:33:47	18.9	97.2	221.1	02m01.3s
042°15.0'W	84°09.81'N	81°59.46'N	83°03.90'N	09:33:48	18.9	97.3	221.1	02m01.3s
042°07.5'W	84°10.17'N	81°59.93'N	83°04.31'N	09:33:49	18.9	97.5	221.1	02m01.3s
042°00.0'W	84°10.53'N	82°00.39'N	83°04.72'N	09:33:50	18.9	97.6	221.1	02m01.3s
041°52.5'W	84°10.88'N	82°00.85'N	83°05.13'N	09:33:51	18.9	97.7	221.1	02m01.4s
041°45.0'W	84°11.23'N	82°01.31'N	83°05.54'N	09:33:52	19.0	97.9	221.1	02m01.4s
041°37.5'W	84°11.58'N	82°01.76'N	83°05.94'N	09:33:53	19.0	98.0	221.1	02m01.4s
041°30.0'W	84°11.93'N	82°02.21'N	83°06.34'N	09:33:54	19.0	98.1	221.1	02m01.4s
041°22.5'W	84°12.27'N	82°02.66'N	83°06.74'N	09:33:56	19.0	98.3	221.1	02m01.5s
041°15.0'W	84°12.61'N	82°03.10'N	83°07.14'N	09:33:57	19.0	98.4	221.1	02m01.5s
041°07.5'W	84°12.96'N	82°03.55'N	83°07.53'N	09:33:58	19.0	98.5	221.1	02m01.5s
041°00.0'W	84°13.29'N	82°03.99'N	83°07.92'N	09:33:59	19.0	98.7	221.1	02m01.5s
040°52.5'W	84°13.63'N	82°04.42'N	83°08.31'N	09:34:00	19.1	98.8	221.1	02m01.6s
040°45.0'W	84°13.97'N	82°04.86'N	83°08.70'N	09:34:01	19.1	98.9	221.1	02m01.6s
040°37.5'W	84°14.30'N	82°05.29'N	83°09.08'N	09:34:02	19.1	99.1	221.1	02m01.6s
040°30.0'W	84°14.63'N	82°05.72'N	83°09.47'N	09:34:03	19.1	99.2	221.2	02m01.6s
040°22.5'W	84°14.96'N	82°06.15'N	83°09.85'N	09:34:04	19.1	99.3	221.2	02m01.7s
040°15.0'W	84°15.28'N	82°06.57'N	83°10.22'N	09:34:05	19.1	99.4	221.2	02m01.7s
040°07.5'W	84°15.61'N	82°07.00'N	83°10.60'N	09:34:07	19.1	99.6	221.2	02m01.7s
040°00.0'W	84°15.93'N	82°07.41'N	83°10.97'N	09:34:08	19.2	99.7	221.2	02m01.7s
039°52.5'W	84°16.25'N	82°07.83'N	83°11.34'N	09:34:09	19.2	99.8	221.2	02m01.8s
039°45.0'W	84°16.57'N	82°08.25'N	83°11.71'N	09:34:10	19.2	100.0	221.2	02m01.8s
039°37.5'W	84°16.89'N	82°08.66'N	83°12.08'N	09:34:11	19.2	100.1	221.2	02m01.8s
039°30.0'W	84°17.20'N	82°09.07'N	83°12.44'N	09:34:12	19.2	100.2	221.2	02m01.8s
039°22.5'W	84°17.51'N	82°09.47'N	83°12.80'N	09:34:13	19.2	100.4	221.2	02m01.9s
039°15.0'W	84°17.82'N	82°09.88'N	83°13.16'N	09:34:14	19.2	100.5	221.2	02m01.9s
039°07.5'W	84°18.13'N	82°10.28'N	83°13.52'N	09:34:15	19.3	100.6	221.2	02m01.9s
039°00.0'W	84°18.44'N	82°10.68'N	83°13.87'N	09:34:16	19.3	100.8	221.2	02m01.9s
038°52.5'W	84°18.75'N	82°11.08'N	83°14.23'N	09:34:17	19.3	100.9	221.2	02m02.0s
038°45.0'W	84°19.05'N	82°11.47'N	83°14.58'N	09:34:19	19.3	101.0	221.2	02m02.0s
038°37.5'W	84°19.35'N	82°11.86'N	83°14.93'N	09:34:20	19.3	101.2	221.2	02m02.0s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
038°30.0'W	84°19.65'N	82°12.25'N	83°15.27'N	09:34:21	19.3	101.3	221.3	02m02.0s
038°22.5'W	84°19.95'N	82°12.64'N	83°15.62'N	09:34:22	19.3	101.4	221.3	02m02.1s
038°15.0'W	84°20.24'N	82°13.02'N	83°15.96'N	09:34:23	19.3	101.6	221.3	02m02.1s
038°07.5'W	84°20.53'N	82°13.41'N	83°16.30'N	09:34:24	19.4	101.7	221.3	02m02.1s
038°00.0'W	84°20.83'N	82°13.79'N	83°16.64'N	09:34:25	19.4	101.8	221.3	02m02.1s
037°52.5'W	84°21.12'N	82°14.16'N	83°16.97'N	09:34:26	19.4	101.9	221.3	02m02.2s
037°45.0'W	84°21.40'N	82°14.54'N	83°17.30'N	09:34:27	19.4	102.1	221.3	02m02.2s
037°37.5'W	84°21.69'N	82°14.91'N	83°17.63'N	09:34:28	19.4	102.2	221.3	02m02.2s
037°30.0'W	84°21.97'N	82°15.28'N	83°17.96'N	09:34:29	19.4	102.3	221.3	02m02.2s
037°22.5'W	84°22.25'N	82°15.65'N	83°18.29'N	09:34:30	19.4	102.5	221.3	02m02.3s
037°15.0'W	84°22.53'N	82°16.01'N	83°18.61'N	09:34:32	19.5	102.6	221.3	02m02.3s
037°07.5'W	84°22.81'N	82°16.38'N	83°18.94'N	09:34:33	19.5	102.7	221.3	02m02.3s
037°00.0'W	84°23.09'N	82°16.74'N	83°19.26'N	09:34:34	19.5	102.9	221.3	02m02.3s
036°52.5'W	84°23.36'N	82°17.09'N	83°19.57'N	09:34:35	19.5	103.0	221.3	02m02.4s
036°45.0'W	84°23.64'N	82°17.45'N	83°19.89'N	09:34:36	19.5	103.1	221.3	02m02.4s
036°37.5'W	84°23.91'N	82°17.80'N	83°20.20'N	09:34:37	19.5	103.3	221.3	02m02.4s
036°30.0'W	84°24.18'N	82°18.15'N	83°20.52'N	09:34:38	19.5	103.4	221.4	02m02.4s
036°22.5'W	84°24.45'N	82°18.50'N	83°20.83'N	09:34:39	19.6	103.5	221.4	02m02.5s
036°15.0'W	84°24.71'N	82°18.85'N	83°21.13'N	09:34:40	19.6	103.7	221.4	02m02.5s
036°07.5'W	84°24.97'N	82°19.19'N	83°21.44'N	09:34:41	19.6	103.8	221.4	02m02.5s
036°00.0'W	84°25.24'N	82°19.54'N	83°21.74'N	09:34:42	19.6	103.9	221.4	02m02.5s
035°52.5'W	84°25.50'N	82°19.87'N	83°22.04'N	09:34:43	19.6	104.1	221.4	02m02.6s
035°45.0'W	84°25.75'N	82°20.21'N	83°22.34'N	09:34:44	19.6	104.2	221.4	02m02.6s
035°37.5'W	84°26.01'N	82°20.55'N	83°22.64'N	09:34:45	19.6	104.3	221.4	02m02.6s
035°30.0'W	84°26.27'N	82°20.88'N	83°22.94'N	09:34:47	19.6	104.5	221.4	02m02.6s
035°22.5'W	84°26.52'N	82°21.21'N	83°23.23'N	09:34:48	19.7	104.6	221.4	02m02.6s
035°15.0'W	84°26.77'N	82°21.54'N	83°23.52'N	09:34:49	19.7	104.7	221.4	02m02.7s
035°07.5'W	84°27.02'N	82°21.86'N	83°23.81'N	09:34:50	19.7	104.8	221.4	02m02.7s
035°00.0'W	84°27.27'N	82°22.19'N	83°24.10'N	09:34:51	19.7	105.0	221.4	02m02.7s
034°52.5'W	84°27.51'N	82°22.51'N	83°24.38'N	09:34:52	19.7	105.1	221.4	02m02.7s
034°45.0'W	84°27.76'N	82°22.83'N	83°24.66'N	09:34:53	19.7	105.2	221.4	02m02.8s
034°37.5'W	84°28.00'N	82°23.14'N	83°24.95'N	09:34:54	19.7	105.4	221.4	02m02.8s
034°30.0'W	84°28.24'N	82°23.46'N	83°25.22'N	09:34:55	19.8	105.5	221.4	02m02.8s
034°22.5'W	84°28.48'N	82°23.77'N	83°25.50'N	09:34:56	19.8	105.6	221.5	02m02.8s
034°15.0'W	84°28.72'N	82°24.08'N	83°25.78'N	09:34:57	19.8	105.8	221.5	02m02.9s
034°07.5'W	84°28.95'N	82°24.39'N	83°26.05'N	09:34:58	19.8	105.9	221.5	02m02.9s
034°00.0'W	84°29.19'N	82°24.69'N	83°26.32'N	09:34:59	19.8	106.0	221.5	02m02.9s
033°52.5'W	84°29.42'N	82°25.00'N	83°26.59'N	09:35:00	19.8	106.2	221.5	02m02.9s
033°45.0'W	84°29.65'N	82°25.30'N	83°26.86'N	09:35:01	19.8	106.3	221.5	02m03.0s
033°37.5'W	84°29.88'N	82°25.60'N	83°27.12'N	09:35:02	19.8	106.4	221.5	02m03.0s
033°30.0'W	84°30.11'N	82°25.89'N	83°27.39'N	09:35:04	19.9	106.6	221.5	02m03.0s
033°22.5'W	84°30.33'N	82°26.19'N	83°27.65'N	09:35:05	19.9	106.7	221.5	02m03.0s
033°15.0'W	84°30.56'N	82°26.48'N	83°27.91'N	09:35:06	19.9	106.8	221.5	02m03.0s
033°07.5'W	84°30.78'N	82°26.77'N	83°28.16'N	09:35:07	19.9	107.0	221.5	02m03.1s
033°00.0'W	84°31.00'N	82°27.06'N	83°28.42'N	09:35:08	19.9	107.1	221.5	02m03.1s
032°52.5'W	84°31.22'N	82°27.34'N	83°28.67'N	09:35:09	19.9	107.2	221.5	02m03.1s
032°45.0'W	84°31.44'N	82°27.63'N	83°28.93'N	09:35:10	19.9	107.3	221.5	02m03.1s
032°37.5'W	84°31.65'N	82°27.91'N	83°29.17'N	09:35:11	19.9	107.5	221.5	02m03.2s
032°30.0'W	84°31.86'N	82°28.19'N	83°29.42'N	09:35:12	20.0	107.6	221.5	02m03.2s
032°22.5'W	84°32.08'N	82°28.46'N	83°29.67'N	09:35:13	20.0	107.7	221.5	02m03.2s
032°15.0'W	84°32.29'N	82°28.74'N	83°29.91'N	09:35:14	20.0	107.9	221.6	02m03.2s
032°07.5'W	84°32.50'N	82°29.01'N	83°30.15'N	09:35:15	20.0	108.0	221.6	02m03.3s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
032°00.0'W	84°32.70'N	82°29.28'N	83°30.40'N	09:35:16	20.0	108.1	221.6	02m03.3s
031°52.5'W	84°32.91'N	82°29.55'N	83°30.63'N	09:35:17	20.0	108.3	221.6	02m03.3s
031°45.0'W	84°33.11'N	82°29.82'N	83°30.87'N	09:35:18	20.0	108.4	221.6	02m03.3s
031°37.5'W	84°33.32'N	82°30.08'N	83°31.10'N	09:35:19	20.0	108.5	221.6	02m03.3s
031°30.0'W	84°33.52'N	82°30.34'N	83°31.34'N	09:35:20	20.1	108.7	221.6	02m03.4s
031°22.5'W	84°33.71'N	82°30.60'N	83°31.57'N	09:35:21	20.1	108.8	221.6	02m03.4s
031°15.0'W	84°33.91'N	82°30.86'N	83°31.80'N	09:35:22	20.1	108.9	221.6	02m03.4s
031°07.5'W	84°34.11'N	82°31.12'N	83°32.02'N	09:35:23	20.1	109.1	221.6	02m03.4s
031°00.0'W	84°34.30'N	82°31.37'N	83°32.25'N	09:35:24	20.1	109.2	221.6	02m03.5s
030°52.5'W	84°34.49'N	82°31.62'N	83°32.47'N	09:35:26	20.1	109.3	221.6	02m03.5s
030°45.0'W	84°34.69'N	82°31.87'N	83°32.69'N	09:35:27	20.1	109.5	221.6	02m03.5s
030°37.5'W	84°34.88'N	82°32.12'N	83°32.91'N	09:35:28	20.1	109.6	221.6	02m03.5s
030°30.0'W	84°35.06'N	82°32.37'N	83°33.13'N	09:35:29	20.2	109.7	221.6	02m03.5s
030°22.5'W	84°35.25'N	82°32.61'N	83°33.35'N	09:35:30	20.2	109.8	221.6	02m03.6s
030°15.0'W	84°35.44'N	82°32.85'N	83°33.56'N	09:35:31	20.2	110.0	221.6	02m03.6s
030°07.5'W	84°35.62'N	82°33.09'N	83°33.77'N	09:35:32	20.2	110.1	221.6	02m03.6s
030°00.0'W	84°35.80'N	82°33.33'N	83°33.98'N	09:35:33	20.2	110.2	221.7	02m03.6s
029°52.5'W	84°35.98'N	82°33.56'N	83°34.19'N	09:35:34	20.2	110.4	221.7	02m03.7s
029°45.0'W	84°36.16'N	82°33.80'N	83°34.40'N	09:35:35	20.2	110.5	221.7	02m03.7s
029°37.5'W	84°36.33'N	82°34.03'N	83°34.61'N	09:35:36	20.2	110.6	221.7	02m03.7s
029°30.0'W	84°36.51'N	82°34.26'N	83°34.81'N	09:35:37	20.3	110.8	221.7	02m03.7s
029°22.5'W	84°36.68'N	82°34.48'N	83°35.01'N	09:35:38	20.3	110.9	221.7	02m03.7s
029°15.0'W	84°36.86'N	82°34.71'N	83°35.21'N	09:35:39	20.3	111.0	221.7	02m03.8s
029°07.5'W	84°37.03'N	82°34.93'N	83°35.41'N	09:35:40	20.3	111.2	221.7	02m03.8s
029°00.0'W	84°37.20'N	82°35.15'N	83°35.60'N	09:35:41	20.3	111.3	221.7	02m03.8s
028°52.5'W	84°37.36'N	82°35.37'N	83°35.80'N	09:35:42	20.3	111.4	221.7	02m03.8s
028°45.0'W	84°37.53'N	82°35.59'N	83°35.99'N	09:35:43	20.3	111.6	221.7	02m03.9s
028°37.5'W	84°37.70'N	82°35.80'N	83°36.18'N	09:35:44	20.3	111.7	221.7	02m03.9s
028°30.0'W	84°37.86'N	82°36.02'N	83°36.37'N	09:35:45	20.4	111.8	221.7	02m03.9s
028°22.5'W	84°38.02'N	82°36.23'N	83°36.56'N	09:35:46	20.4	111.9	221.7	02m03.9s
028°15.0'W	84°38.18'N	82°36.44'N	83°36.74'N	09:35:47	20.4	112.1	221.7	02m03.9s
028°07.5'W	84°38.34'N	82°36.64'N	83°36.93'N	09:35:48	20.4	112.2	221.7	02m04.0s
028°00.0'W	84°38.49'N	82°36.85'N	83°37.11'N	09:35:49	20.4	112.3	221.7	02m04.0s
027°52.5'W	84°38.65'N	82°37.05'N	83°37.29'N	09:35:50	20.4	112.5	221.7	02m04.0s
027°45.0'W	84°38.80'N	82°37.25'N	83°37.47'N	09:35:51	20.4	112.6	221.8	02m04.0s
027°37.5'W	84°38.96'N	82°37.45'N	83°37.64'N	09:35:52	20.4	112.7	221.8	02m04.1s
027°30.0'W	84°39.11'N	82°37.65'N	83°37.82'N	09:35:54	20.5	112.9	221.8	02m04.1s
027°22.5'W	84°39.26'N	82°37.84'N	83°37.99'N	09:35:55	20.5	113.0	221.8	02m04.1s
027°15.0'W	84°39.40'N	82°38.03'N	83°38.16'N	09:35:56	20.5	113.1	221.8	02m04.1s
027°07.5'W	84°39.55'N	82°38.23'N	83°38.33'N	09:35:57	20.5	113.3	221.8	02m04.1s
027°00.0'W	84°39.70'N	82°38.42'N	83°38.50'N	09:35:58	20.5	113.4	221.8	02m04.2s
026°52.5'W	84°39.84'N	82°38.60'N	83°38.67'N	09:35:59	20.5	113.5	221.8	02m04.2s
026°45.0'W	84°39.98'N	82°38.79'N	83°38.83'N	09:36:00	20.5	113.7	221.8	02m04.2s
026°37.5'W	84°40.12'N	82°38.97'N	83°39.00'N	09:36:01	20.5	113.8	221.8	02m04.2s
026°30.0'W	84°40.26'N	82°39.15'N	83°39.16'N	09:36:02	20.5	113.9	221.8	02m04.3s
026°22.5'W	84°40.40'N	82°39.33'N	83°39.32'N	09:36:03	20.6	114.1	221.8	02m04.3s
026°15.0'W	84°40.53'N	82°39.51'N	83°39.47'N	09:36:04	20.6	114.2	221.8	02m04.3s
026°07.5'W	84°40.67'N	82°39.68'N	83°39.63'N	09:36:05	20.6	114.3	221.8	02m04.3s
026°00.0'W	84°40.80'N	82°39.86'N	83°39.78'N	09:36:06	20.6	114.4	221.8	02m04.3s
025°52.5'W	84°40.93'N	82°40.03'N	83°39.94'N	09:36:07	20.6	114.6	221.8	02m04.4s
025°45.0'W	84°41.06'N	82°40.20'N	83°40.09'N	09:36:08	20.6	114.7	221.8	02m04.4s
025°37.5'W	84°41.19'N	82°40.37'N	83°40.24'N	09:36:09	20.6	114.8	221.8	02m04.4s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
025°30.0'W	84°41.32'N	82°40.53'N	83°40.38'N	09:36:10	20.6	115.0	221.9	02m04.4s
025°22.5'W	84°41.45'N	82°40.70'N	83°40.53'N	09:36:11	20.7	115.1	221.9	02m04.4s
025°15.0'W	84°41.57'N	82°40.86'N	83°40.67'N	09:36:12	20.7	115.2	221.9	02m04.5s
025°07.5'W	84°41.69'N	82°41.02'N	83°40.82'N	09:36:13	20.7	115.4	221.9	02m04.5s
025°00.0'W	84°41.81'N	82°41.18'N	83°40.96'N	09:36:14	20.7	115.5	221.9	02m04.5s
024°52.5'W	84°41.94'N	82°41.33'N	83°41.09'N	09:36:15	20.7	115.6	221.9	02m04.5s
024°45.0'W	84°42.05'N	82°41.49'N	83°41.23'N	09:36:16	20.7	115.8	221.9	02m04.6s
024°37.5'W	84°42.17'N	82°41.64'N	83°41.37'N	09:36:17	20.7	115.9	221.9	02m04.6s
024°30.0'W	84°42.29'N	82°41.79'N	83°41.50'N	09:36:18	20.7	116.0	221.9	02m04.6s
024°22.5'W	84°42.40'N	82°41.94'N	83°41.63'N	09:36:19	20.8	116.2	221.9	02m04.6s
024°15.0'W	84°42.51'N	82°42.09'N	83°41.76'N	09:36:20	20.8	116.3	221.9	02m04.6s
024°07.5'W	84°42.62'N	82°42.23'N	83°41.89'N	09:36:21	20.8	116.4	221.9	02m04.7s
024°00.0'W	84°42.73'N	82°42.37'N	83°42.02'N	09:36:22	20.8	116.6	221.9	02m04.7s
023°52.5'W	84°42.84'N	82°42.51'N	83°42.15'N	09:36:23	20.8	116.7	221.9	02m04.7s
023°45.0'W	84°42.95'N	82°42.65'N	83°42.27'N	09:36:24	20.8	116.8	221.9	02m04.7s
023°37.5'W	84°43.06'N	82°42.79'N	83°42.39'N	09:36:25	20.8	117.0	221.9	02m04.7s
023°30.0'W	84°43.16'N	82°42.93'N	83°42.51'N	09:36:26	20.8	117.1	221.9	02m04.8s
023°22.5'W	84°43.26'N	82°43.06'N	83°42.63'N	09:36:27	20.8	117.2	221.9	02m04.8s
023°15.0'W	84°43.36'N	82°43.19'N	83°42.75'N	09:36:28	20.9	117.3	221.9	02m04.8s
023°07.5'W	84°43.46'N	82°43.32'N	83°42.86'N	09:36:30	20.9	117.5	222.0	02m04.8s
023°00.0'W	84°43.56'N	82°43.45'N	83°42.98'N	09:36:31	20.9	117.6	222.0	02m04.9s
022°52.5'W	84°43.66'N	82°43.58'N	83°43.09'N	09:36:32	20.9	117.7	222.0	02m04.9s
022°45.0'W	84°43.76'N	82°43.70'N	83°43.20'N	09:36:33	20.9	117.9	222.0	02m04.9s
022°37.5'W	84°43.85'N	82°43.82'N	83°43.31'N	09:36:34	20.9	118.0	222.0	02m04.9s
022°30.0'W	84°43.94'N	82°43.94'N	83°43.42'N	09:36:35	20.9	118.1	222.0	02m04.9s
022°22.5'W	84°44.03'N	82°44.06'N	83°43.52'N	09:36:36	20.9	118.3	222.0	02m05.0s
022°15.0'W	84°44.13'N	82°44.18'N	83°43.63'N	09:36:37	20.9	118.4	222.0	02m05.0s
022°07.5'W	84°44.21'N	82°44.29'N	83°43.73'N	09:36:38	21.0	118.5	222.0	02m05.0s
022°00.0'W	84°44.30'N	82°44.41'N	83°43.83'N	09:36:39	21.0	118.7	222.0	02m05.0s
021°52.5'W	84°44.39'N	82°44.52'N	83°43.93'N	09:36:40	21.0	118.8	222.0	02m05.0s
021°45.0'W	84°44.47'N	82°44.63'N	83°44.03'N	09:36:41	21.0	118.9	222.0	02m05.1s
021°37.5'W	84°44.56'N	82°44.73'N	83°44.12'N	09:36:42	21.0	119.1	222.0	02m05.1s
021°30.0'W	84°44.64'N	82°44.84'N	83°44.22'N	09:36:43	21.0	119.2	222.0	02m05.1s
021°22.5'W	84°44.72'N	82°44.94'N	83°44.31'N	09:36:44	21.0	119.3	222.0	02m05.1s
021°15.0'W	84°44.80'N	82°45.05'N	83°44.40'N	09:36:45	21.0	119.5	222.0	02m05.1s
021°07.5'W	84°44.87'N	82°45.15'N	83°44.49'N	09:36:46	21.1	119.6	222.0	02m05.2s
021°00.0'W	84°44.95'N	82°45.24'N	83°44.58'N	09:36:47	21.1	119.7	222.0	02m05.2s
020°52.5'W	84°45.02'N	82°45.34'N	83°44.66'N	09:36:48	21.1	119.8	222.0	02m05.2s
020°45.0'W	84°45.10'N	82°45.43'N	83°44.75'N	09:36:49	21.1	120.0	222.1	02m05.2s
020°37.5'W	84°45.17'N	82°45.53'N	83°44.83'N	09:36:50	21.1	120.1	222.1	02m05.2s
020°30.0'W	84°45.24'N	82°45.62'N	83°44.91'N	09:36:51	21.1	120.2	222.1	02m05.3s
020°22.5'W	84°45.31'N	82°45.71'N	83°44.99'N	09:36:52	21.1	120.4	222.1	02m05.3s
020°15.0'W	84°45.38'N	82°45.79'N	83°45.07'N	09:36:53	21.1	120.5	222.1	02m05.3s
020°07.5'W	84°45.44'N	82°45.88'N	83°45.15'N	09:36:54	21.1	120.6	222.1	02m05.3s
020°00.0'W	84°45.51'N	82°45.96'N	83°45.22'N	09:36:55	21.2	120.8	222.1	02m05.4s
019°52.5'W	84°45.57'N	82°46.05'N	83°45.30'N	09:36:56	21.2	120.9	222.1	02m05.4s
019°45.0'W	84°45.64'N	82°46.13'N	83°45.37'N	09:36:57	21.2	121.0	222.1	02m05.4s
019°37.5'W	84°45.70'N	82°46.20'N	83°45.44'N	09:36:58	21.2	121.2	222.1	02m05.4s
019°30.0'W	84°45.76'N	82°46.28'N	83°45.51'N	09:36:59	21.2	121.3	222.1	02m05.4s
019°22.5'W	84°45.81'N	82°46.35'N	83°45.57'N	09:37:00	21.2	121.4	222.1	02m05.5s
019°15.0'W	84°45.87'N	82°46.43'N	83°45.64'N	09:37:01	21.2	121.6	222.1	02m05.5s
019°07.5'W	84°45.93'N	82°46.50'N	83°45.70'N	09:37:02	21.2	121.7	222.1	02m05.5s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
019°00.0'W	84°45.98'N	82°46.57'N	83°45.76'N	09:37:03	21.2	121.8	222.1	02m05.5s
018°52.5'W	84°46.03'N	82°46.64'N	83°45.83'N	09:37:04	21.3	122.0	222.1	02m05.5s
018°45.0'W	84°46.09'N	82°46.70'N	83°45.88'N	09:37:05	21.3	122.1	222.1	02m05.6s
018°37.5'W	84°46.14'N	82°46.76'N	83°45.94'N	09:37:07	21.3	122.2	222.1	02m05.6s
018°30.0'W	84°46.19'N	82°46.83'N	83°46.00'N	09:37:08	21.3	122.3	222.1	02m05.6s
018°22.5'W	84°46.23'N	82°46.89'N	83°46.05'N	09:37:09	21.3	122.5	222.1	02m05.6s
018°15.0'W	84°46.28'N	82°46.94'N	83°46.10'N	09:37:10	21.3	122.6	222.2	02m05.6s
018°07.5'W	84°46.32'N	82°47.00'N	83°46.16'N	09:37:11	21.3	122.7	222.2	02m05.7s
018°00.0'W	84°46.37'N	82°47.05'N	83°46.20'N	09:37:12	21.3	122.9	222.2	02m05.7s
017°52.5'W	84°46.41'N	82°47.11'N	83°46.25'N	09:37:13	21.4	123.0	222.2	02m05.7s
017°45.0'W	84°46.45'N	82°47.16'N	83°46.30'N	09:37:14	21.4	123.1	222.2	02m05.7s
017°37.5'W	84°46.49'N	82°47.21'N	83°46.34'N	09:37:15	21.4	123.3	222.2	02m05.7s
017°30.0'W	84°46.53'N	82°47.26'N	83°46.39'N	09:37:16	21.4	123.4	222.2	02m05.8s
017°22.5'W	84°46.56'N	82°47.30'N	83°46.43'N	09:37:17	21.4	123.5	222.2	02m05.8s
017°15.0'W	84°46.60'N	82°47.34'N	83°46.47'N	09:37:18	21.4	123.7	222.2	02m05.8s
017°07.5'W	84°46.63'N	82°47.39'N	83°46.51'N	09:37:19	21.4	123.8	222.2	02m05.8s
017°00.0'W	84°46.66'N	82°47.43'N	83°46.54'N	09:37:20	21.4	123.9	222.2	02m05.8s
016°52.5'W	84°46.70'N	82°47.47'N	83°46.58'N	09:37:21	21.4	124.1	222.2	02m05.9s
016°45.0'W	84°46.72'N	82°47.50'N	83°46.61'N	09:37:22	21.5	124.2	222.2	02m05.9s
016°37.5'W	84°46.75'N	82°47.54'N	83°46.64'N	09:37:23	21.5	124.3	222.2	02m05.9s
016°30.0'W	84°46.78'N	82°47.57'N	83°46.67'N	09:37:24	21.5	124.5	222.2	02m05.9s
016°22.5'W	84°46.81'N	82°47.60'N	83°46.70'N	09:37:25	21.5	124.6	222.2	02m06.0s
016°15.0'W	84°46.83'N	82°47.63'N	83°46.73'N	09:37:26	21.5	124.7	222.2	02m06.0s
016°07.5'W	84°46.85'N	82°47.66'N	83°46.76'N	09:37:27	21.5	124.9	222.2	02m06.0s
016°00.0'W	84°46.88'N	82°47.68'N	83°46.78'N	09:37:28	21.5	125.0	222.2	02m06.0s
015°52.5'W	84°46.90'N	82°47.71'N	83°46.80'N	09:37:29	21.5	125.1	222.3	02m06.0s
015°45.0'W	84°46.91'N	82°47.73'N	83°46.82'N	09:37:30	21.5	125.2	222.3	02m06.1s
015°37.5'W	84°46.93'N	82°47.75'N	83°46.84'N	09:37:31	21.6	125.4	222.3	02m06.1s
015°30.0'W	84°46.95'N	82°47.77'N	83°46.86'N	09:37:32	21.6	125.5	222.3	02m06.1s
015°22.5'W	84°46.96'N	82°47.79'N	83°46.88'N	09:37:33	21.6	125.6	222.3	02m06.1s
015°15.0'W	84°46.98'N	82°47.80'N	83°46.89'N	09:37:34	21.6	125.8	222.3	02m06.1s
015°07.5'W	84°46.99'N	82°47.81'N	83°46.90'N	09:37:35	21.6	125.9	222.3	02m06.2s
015°00.0'W	84°47.00'N	82°47.82'N	83°46.91'N	09:37:37	21.6	126.0	222.3	02m06.2s
014°52.5'W	84°47.01'N	82°47.83'N	83°46.92'N	09:37:38	21.6	126.2	222.3	02m06.2s
014°45.0'W	84°47.02'N	82°47.84'N	83°46.93'N	09:37:39	21.6	126.3	222.3	02m06.2s
014°37.5'W	84°47.02'N	82°47.85'N	83°46.94'N	09:37:40	21.6	126.4	222.3	02m06.2s
014°30.0'W	84°47.03'N	82°47.85'N	83°46.95'N	09:37:41	21.7	126.6	222.3	02m06.3s
014°22.5'W	84°47.03'N	82°47.86'N	83°46.95'N	09:37:42	21.7	126.7	222.3	02m06.3s
014°15.0'W	84°47.04'N	82°47.86'N	83°46.95'N	09:37:43	21.7	126.8	222.3	02m06.3s
014°07.5'W	84°47.04'N	82°47.86'N	83°46.95'N	09:37:44	21.7	127.0	222.3	02m06.3s
014°00.0'W	84°47.04'N	82°47.85'N	83°46.95'N	09:37:45	21.7	127.1	222.3	02m06.3s
013°52.5'W	84°47.04'N	82°47.85'N	83°46.95'N	09:37:46	21.7	127.2	222.3	02m06.4s
013°45.0'W	84°47.03'N	82°47.84'N	83°46.94'N	09:37:47	21.7	127.4	222.3	02m06.4s
013°37.5'W	84°47.03'N	82°47.83'N	83°46.94'N	09:37:48	21.7	127.5	222.3	02m06.4s
013°30.0'W	84°47.03'N	82°47.82'N	83°46.93'N	09:37:49	21.7	127.6	222.3	02m06.4s
013°22.5'W	84°47.02'N	82°47.81'N	83°46.92'N	09:37:50	21.8	127.8	222.4	02m06.4s
013°15.0'W	84°47.01'N	82°47.80'N	83°46.91'N	09:37:51	21.8	127.9	222.4	02m06.5s
013°07.5'W	84°47.00'N	82°47.78'N	83°46.90'N	09:37:52	21.8	128.0	222.4	02m06.5s
013°00.0'W	84°46.99'N	82°47.76'N	83°46.88'N	09:37:53	21.8	128.2	222.4	02m06.5s
012°52.5'W	84°46.98'N	82°47.74'N	83°46.87'N	09:37:54	21.8	128.3	222.4	02m06.5s
012°45.0'W	84°46.97'N	82°47.72'N	83°46.85'N	09:37:55	21.8	128.4	222.4	02m06.5s
012°37.5'W	84°46.95'N	82°47.70'N	83°46.83'N	09:37:56	21.8	128.5	222.4	02m06.6s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
012°30.0'W	84°46.93'N	82°47.68'N	83°46.81'N	09:37:57	21.8	128.7	222.4	02m06.6s
012°22.5'W	84°46.92'N	82°47.65'N	83°46.79'N	09:37:59	21.8	128.8	222.4	02m06.6s
012°15.0'W	84°46.90'N	82°47.62'N	83°46.77'N	09:38:00	21.9	128.9	222.4	02m06.6s
012°07.5'W	84°46.88'N	82°47.59'N	83°46.74'N	09:38:01	21.9	129.1	222.4	02m06.6s
012°00.0'W	84°46.86'N	82°47.56'N	83°46.72'N	09:38:02	21.9	129.2	222.4	02m06.7s
011°52.5'W	84°46.83'N	82°47.53'N	83°46.69'N	09:38:03	21.9	129.3	222.4	02m06.7s
011°45.0'W	84°46.81'N	82°47.49'N	83°46.66'N	09:38:04	21.9	129.5	222.4	02m06.7s
011°37.5'W	84°46.78'N	82°47.45'N	83°46.63'N	09:38:05	21.9	129.6	222.4	02m06.7s
011°30.0'W	84°46.76'N	82°47.42'N	83°46.59'N	09:38:06	21.9	129.7	222.4	02m06.7s
011°22.5'W	84°46.73'N	82°47.37'N	83°46.56'N	09:38:07	21.9	129.9	222.4	02m06.8s
011°15.0'W	84°46.70'N	82°47.33'N	83°46.52'N	09:38:08	21.9	130.0	222.4	02m06.8s
011°07.5'W	84°46.67'N	82°47.29'N	83°46.49'N	09:38:09	22.0	130.1	222.4	02m06.8s
011°00.0'W	84°46.64'N	82°47.24'N	83°46.45'N	09:38:10	22.0	130.3	222.4	02m06.8s
010°52.5'W	84°46.60'N	82°47.19'N	83°46.41'N	09:38:11	22.0	130.4	222.5	02m06.8s
010°45.0'W	84°46.57'N	82°47.14'N	83°46.37'N	09:38:12	22.0	130.5	222.5	02m06.9s
010°37.5'W	84°46.53'N	82°47.09'N	83°46.32'N	09:38:13	22.0	130.7	222.5	02m06.9s
010°30.0'W	84°46.49'N	82°47.04'N	83°46.28'N	09:38:14	22.0	130.8	222.5	02m06.9s
010°22.5'W	84°46.46'N	82°46.98'N	83°46.23'N	09:38:15	22.0	130.9	222.5	02m06.9s
010°15.0'W	84°46.41'N	82°46.93'N	83°46.18'N	09:38:17	22.0	131.1	222.5	02m06.9s
010°07.5'W	84°46.37'N	82°46.87'N	83°46.13'N	09:38:18	22.0	131.2	222.5	02m07.0s
010°00.0'W	84°46.33'N	82°46.81'N	83°46.08'N	09:38:19	22.1	131.3	222.5	02m07.0s
009°52.5'W	84°46.29'N	82°46.74'N	83°46.02'N	09:38:20	22.1	131.5	222.5	02m07.0s
009°45.0'W	84°46.24'N	82°46.68'N	83°45.97'N	09:38:21	22.1	131.6	222.5	02m07.0s
009°37.5'W	84°46.19'N	82°46.61'N	83°45.91'N	09:38:22	22.1	131.7	222.5	02m07.0s
009°30.0'W	84°46.14'N	82°46.55'N	83°45.85'N	09:38:23	22.1	131.9	222.5	02m07.1s
009°22.5'W	84°46.09'N	82°46.48'N	83°45.79'N	09:38:24	22.1	132.0	222.5	02m07.1s
009°15.0'W	84°46.04'N	82°46.41'N	83°45.73'N	09:38:25	22.1	132.1	222.5	02m07.1s
009°07.5'W	84°45.99'N	82°46.33'N	83°45.67'N	09:38:26	22.1	132.2	222.5	02m07.1s
009°00.0'W	84°45.94'N	82°46.26'N	83°45.61'N	09:38:27	22.1	132.4	222.5	02m07.1s
008°52.5'W	84°45.88'N	82°46.18'N	83°45.54'N	09:38:28	22.2	132.5	222.5	02m07.2s
008°45.0'W	84°45.82'N	82°46.10'N	83°45.47'N	09:38:29	22.2	132.6	222.5	02m07.2s
008°37.5'W	84°45.77'N	82°46.02'N	83°45.40'N	09:38:30	22.2	132.8	222.5	02m07.2s
008°30.0'W	84°45.71'N	82°45.94'N	83°45.33'N	09:38:32	22.2	132.9	222.6	02m07.2s
008°22.5'W	84°45.64'N	82°45.85'N	83°45.26'N	09:38:33	22.2	133.0	222.6	02m07.2s
008°15.0'W	84°45.58'N	82°45.77'N	83°45.18'N	09:38:34	22.2	133.2	222.6	02m07.3s
008°07.5'W	84°45.52'N	82°45.68'N	83°45.11'N	09:38:35	22.2	133.3	222.6	02m07.3s
008°00.0'W	84°45.45'N	82°45.59'N	83°45.03'N	09:38:36	22.2	133.4	222.6	02m07.3s
007°52.5'W	84°45.39'N	82°45.50'N	83°44.95'N	09:38:37	22.2	133.6	222.6	02m07.3s
007°45.0'W	84°45.32'N	82°45.40'N	83°44.87'N	09:38:38	22.3	133.7	222.6	02m07.4s
007°37.5'W	84°45.25'N	82°45.31'N	83°44.79'N	09:38:39	22.3	133.8	222.6	02m07.4s
007°30.0'W	84°45.18'N	82°45.21'N	83°44.70'N	09:38:40	22.3	134.0	222.6	02m07.4s
007°22.5'W	84°45.11'N	82°45.11'N	83°44.62'N	09:38:41	22.3	134.1	222.6	02m07.4s
007°15.0'W	84°45.03'N	82°45.01'N	83°44.53'N	09:38:42	22.3	134.2	222.6	02m07.4s
007°07.5'W	84°44.96'N	82°44.91'N	83°44.44'N	09:38:43	22.3	134.4	222.6	02m07.5s
007°00.0'W	84°44.88'N	82°44.80'N	83°44.35'N	09:38:45	22.3	134.5	222.6	02m07.5s
006°52.5'W	84°44.81'N	82°44.70'N	83°44.26'N	09:38:46	22.3	134.6	222.6	02m07.5s
006°45.0'W	84°44.73'N	82°44.59'N	83°44.17'N	09:38:47	22.3	134.8	222.6	02m07.5s
006°37.5'W	84°44.65'N	82°44.48'N	83°44.07'N	09:38:48	22.4	134.9	222.6	02m07.5s
006°30.0'W	84°44.57'N	82°44.36'N	83°43.97'N	09:38:49	22.4	135.0	222.6	02m07.6s
006°22.5'W	84°44.48'N	82°44.25'N	83°43.87'N	09:38:50	22.4	135.2	222.6	02m07.6s
006°15.0'W	84°44.40'N	82°44.13'N	83°43.78'N	09:38:51	22.4	135.3	222.6	02m07.6s
006°07.5'W	84°44.31'N	82°44.02'N	83°43.67'N	09:38:52	22.4	135.4	222.6	02m07.6s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
006°00.0'W	84°44.22'N	82°43.90'N	83°43.57'N	09:38:53	22.4	135.6	222.7	02m07.6s
005°52.5'W	84°44.14'N	82°43.78'N	83°43.46'N	09:38:54	22.4	135.7	222.7	02m07.7s
005°45.0'W	84°44.05'N	82°43.65'N	83°43.36'N	09:38:55	22.4	135.8	222.7	02m07.7s
005°37.5'W	84°43.95'N	82°43.53'N	83°43.25'N	09:38:57	22.4	136.0	222.7	02m07.7s
005°30.0'W	84°43.86'N	82°43.40'N	83°43.14'N	09:38:58	22.5	136.1	222.7	02m07.7s
005°22.5'W	84°43.77'N	82°43.27'N	83°43.03'N	09:38:59	22.5	136.2	222.7	02m07.7s
005°15.0'W	84°43.67'N	82°43.14'N	83°42.91'N	09:39:00	22.5	136.4	222.7	02m07.8s
005°07.5'W	84°43.57'N	82°43.01'N	83°42.80'N	09:39:01	22.5	136.5	222.7	02m07.8s
005°00.0'W	84°43.48'N	82°42.87'N	83°42.68'N	09:39:02	22.5	136.6	222.7	02m07.8s
004°52.5'W	84°43.37'N	82°42.74'N	83°42.56'N	09:39:03	22.5	136.7	222.7	02m07.8s
004°45.0'W	84°43.27'N	82°42.60'N	83°42.44'N	09:39:04	22.5	136.9	222.7	02m07.8s
004°37.5'W	84°43.17'N	82°42.46'N	83°42.32'N	09:39:05	22.5	137.0	222.7	02m07.9s
004°30.0'W	84°43.07'N	82°42.31'N	83°42.20'N	09:39:07	22.5	137.1	222.7	02m07.9s
004°22.5'W	84°42.96'N	82°42.17'N	83°42.07'N	09:39:08	22.6	137.3	222.7	02m07.9s
004°15.0'W	84°42.85'N	82°42.02'N	83°41.94'N	09:39:09	22.6	137.4	222.7	02m07.9s
004°07.5'W	84°42.74'N	82°41.87'N	83°41.82'N	09:39:10	22.6	137.5	222.7	02m07.9s
004°00.0'W	84°42.64'N	82°41.73'N	83°41.69'N	09:39:11	22.6	137.7	222.7	02m08.0s
003°52.5'W	84°42.52'N	82°41.57'N	83°41.55'N	09:39:12	22.6	137.8	222.7	02m08.0s
003°45.0'W	84°42.41'N	82°41.42'N	83°41.42'N	09:39:13	22.6	137.9	222.7	02m08.0s
003°37.5'W	84°42.30'N	82°41.26'N	83°41.29'N	09:39:14	22.6	138.1	222.8	02m08.0s
003°30.0'W	84°42.18'N	82°41.11'N	83°41.15'N	09:39:15	22.6	138.2	222.8	02m08.0s
003°22.5'W	84°42.06'N	82°40.95'N	83°41.01'N	09:39:17	22.6	138.3	222.8	02m08.1s
003°15.0'W	84°41.94'N	82°40.78'N	83°40.87'N	09:39:18	22.7	138.5	222.8	02m08.1s
003°07.5'W	84°41.82'N	82°40.62'N	83°40.73'N	09:39:19	22.7	138.6	222.8	02m08.1s
003°00.0'W	84°41.70'N	82°40.46'N	83°40.58'N	09:39:20	22.7	138.7	222.8	02m08.1s
002°52.5'W	84°41.58'N	82°40.29'N	83°40.44'N	09:39:21	22.7	138.9	222.8	02m08.1s
002°45.0'W	84°41.45'N	82°40.12'N	83°40.29'N	09:39:22	22.7	139.0	222.8	02m08.2s
002°37.5'W	84°41.33'N	82°39.95'N	83°40.14'N	09:39:23	22.7	139.1	222.8	02m08.2s
002°30.0'W	84°41.20'N	82°39.77'N	83°39.99'N	09:39:24	22.7	139.3	222.8	02m08.2s
002°22.5'W	84°41.07'N	82°39.60'N	83°39.84'N	09:39:26	22.7	139.4	222.8	02m08.2s
002°15.0'W	84°40.94'N	82°39.42'N	83°39.68'N	09:39:27	22.7	139.5	222.8	02m08.2s
002°07.5'W	84°40.81'N	82°39.24'N	83°39.53'N	09:39:28	22.8	139.7	222.8	02m08.3s
002°00.0'W	84°40.68'N	82°39.06'N	83°39.37'N	09:39:29	22.8	139.8	222.8	02m08.3s
001°52.5'W	84°40.54'N	82°38.88'N	83°39.21'N	09:39:30	22.8	139.9	222.8	02m08.3s
001°45.0'W	84°40.41'N	82°38.69'N	83°39.05'N	09:39:31	22.8	140.1	222.8	02m08.3s
001°37.5'W	84°40.27'N	82°38.51'N	83°38.89'N	09:39:32	22.8	140.2	222.8	02m08.3s
001°30.0'W	84°40.13'N	82°38.32'N	83°38.72'N	09:39:34	22.8	140.3	222.8	02m08.4s
001°22.5'W	84°39.99'N	82°38.13'N	83°38.56'N	09:39:35	22.8	140.5	222.8	02m08.4s
001°15.0'W	84°39.85'N	82°37.93'N	83°38.39'N	09:39:36	22.8	140.6	222.9	02m08.4s
001°07.5'W	84°39.70'N	82°37.74'N	83°38.22'N	09:39:37	22.9	140.7	222.9	02m08.4s
001°00.0'W	84°39.56'N	82°37.54'N	83°38.05'N	09:39:38	22.9	140.9	222.9	02m08.5s
000°52.5'W	84°39.41'N	82°37.34'N	83°37.87'N	09:39:39	22.9	141.0	222.9	02m08.5s
000°45.0'W	84°39.26'N	82°37.14'N	83°37.70'N	09:39:40	22.9	141.1	222.9	02m08.5s
000°37.5'W	84°39.11'N	82°36.94'N	83°37.52'N	09:39:42	22.9	141.3	222.9	02m08.5s
000°30.0'W	84°38.96'N	82°36.73'N	83°37.34'N	09:39:43	22.9	141.4	222.9	02m08.5s
000°22.5'W	84°38.81'N	82°36.52'N	83°37.16'N	09:39:44	22.9	141.5	222.9	02m08.6s
000°15.0'W	84°38.65'N	82°36.32'N	83°36.98'N	09:39:45	22.9	141.7	222.9	02m08.6s
000°07.5'W	84°38.50'N	82°36.10'N	83°36.80'N	09:39:46	22.9	141.8	222.9	02m08.6s
000°00.0'E	84°38.34'N	82°35.89'N	83°36.61'N	09:39:47	23.0	141.9	222.9	02m08.6s
000°07.5'E	84°38.18'N	82°35.68'N	83°36.42'N	09:39:49	23.0	142.1	222.9	02m08.6s
000°15.0'E	84°38.02'N	82°35.46'N	83°36.24'N	09:39:50	23.0	142.2	222.9	02m08.7s
000°22.5'E	84°37.86'N	82°35.24'N	83°36.04'N	09:39:51	23.0	142.3	222.9	02m08.7s



Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
000°30.0'E	84°37.70'N	82°35.02'N	83°35.85'N	09:39:52	23.0	142.5	222.9	02m08.7s
000°37.5'E	84°37.53'N	82°34.79'N	83°35.66'N	09:39:53	23.0	142.6	222.9	02m08.7s
000°45.0'E	84°37.36'N	82°34.57'N	83°35.46'N	09:39:54	23.0	142.7	222.9	02m08.7s
000°52.5'E	84°37.19'N	82°34.34'N	83°35.26'N	09:39:56	23.0	142.9	222.9	02m08.8s
001°00.0'E	84°37.02'N	82°34.11'N	83°35.06'N	09:39:57	23.0	143.0	223.0	02m08.8s
001°07.5'E	84°36.85'N	82°33.88'N	83°34.86'N	09:39:58	23.1	143.1	223.0	02m08.8s
001°15.0'E	84°36.68'N	82°33.65'N	83°34.66'N	09:39:59	23.1	143.3	223.0	02m08.8s
001°22.5'E	84°36.51'N	82°33.41'N	83°34.45'N	09:40:00	23.1	143.4	223.0	02m08.8s
001°30.0'E	84°36.33'N	82°33.17'N	83°34.24'N	09:40:02	23.1	143.5	223.0	02m08.9s
001°37.5'E	84°36.15'N	82°32.93'N	83°34.03'N	09:40:03	23.1	143.7	223.0	02m08.9s
001°45.0'E	84°35.97'N	82°32.69'N	83°33.82'N	09:40:04	23.1	143.8	223.0	02m08.9s
001°52.5'E	84°35.79'N	82°32.45'N	83°33.61'N	09:40:05	23.1	143.9	223.0	02m08.9s
002°00.0'E	84°35.61'N	82°32.20'N	83°33.39'N	09:40:06	23.1	144.1	223.0	02m09.0s
002°07.5'E	84°35.43'N	82°31.95'N	83°33.18'N	09:40:07	23.1	144.2	223.0	02m09.0s
002°15.0'E	84°35.24'N	82°31.70'N	83°32.96'N	09:40:09	23.2	144.3	223.0	02m09.0s
002°22.5'E	84°35.05'N	82°31.45'N	83°32.74'N	09:40:10	23.2	144.5	223.0	02m09.0s
002°30.0'E	84°34.87'N	82°31.19'N	83°32.52'N	09:40:11	23.2	144.6	223.0	02m09.0s
002°37.5'E	84°34.68'N	82°30.94'N	83°32.29'N	09:40:12	23.2	144.7	223.0	02m09.1s
002°45.0'E	84°34.48'N	82°30.68'N	83°32.07'N	09:40:13	23.2	144.9	223.0	02m09.1s
002°52.5'E	84°34.29'N	82°30.41'N	83°31.84'N	09:40:15	23.2	145.0	223.0	02m09.1s
003°00.0'E	84°34.09'N	82°30.15'N	83°31.61'N	09:40:16	23.2	145.1	223.0	02m09.1s
003°07.5'E	84°33.90'N	82°29.89'N	83°31.38'N	09:40:17	23.2	145.3	223.0	02m09.1s
003°15.0'E	84°33.70'N	82°29.62'N	83°31.14'N	09:40:18	23.3	145.4	223.0	02m09.2s
003°22.5'E	84°33.50'N	82°29.35'N	83°30.91'N	09:40:19	23.3	145.5	223.1	02m09.2s
003°30.0'E	84°33.30'N	82°29.08'N	83°30.67'N	09:40:21	23.3	145.7	223.1	02m09.2s
003°37.5'E	84°33.09'N	82°28.80'N	83°30.43'N	09:40:22	23.3	145.8	223.1	02m09.2s
003°45.0'E	84°32.89'N	82°28.53'N	83°30.19'N	09:40:23	23.3	145.9	223.1	02m09.2s
003°52.5'E	84°32.68'N	82°28.25'N	83°29.95'N	09:40:24	23.3	146.1	223.1	02m09.3s
004°00.0'E	84°32.48'N	82°27.97'N	83°29.70'N	09:40:26	23.3	146.2	223.1	02m09.3s
004°07.5'E	84°32.27'N	82°27.68'N	83°29.45'N	09:40:27	23.3	146.3	223.1	02m09.3s
004°15.0'E	84°32.05'N	82°27.40'N	83°29.20'N	09:40:28	23.3	146.5	223.1	02m09.3s
004°22.5'E	84°31.84'N	82°27.11'N	83°28.95'N	09:40:29	23.4	146.6	223.1	02m09.4s
004°30.0'E	84°31.63'N	82°26.82'N	83°28.70'N	09:40:30	23.4	146.7	223.1	02m09.4s
004°37.5'E	84°31.41'N	82°26.53'N	83°28.45'N	09:40:32	23.4	146.9	223.1	02m09.4s
004°45.0'E	84°31.19'N	82°26.23'N	83°28.19'N	09:40:33	23.4	147.0	223.1	02m09.4s
004°52.5'E	84°30.97'N	82°25.94'N	83°27.93'N	09:40:34	23.4	147.1	223.1	02m09.4s
005°00.0'E	84°30.75'N	82°25.64'N	83°27.67'N	09:40:35	23.4	147.3	223.1	02m09.5s
005°07.5'E	84°30.53'N	82°25.34'N	83°27.41'N	09:40:37	23.4	147.4	223.1	02m09.5s
005°15.0'E	84°30.30'N	82°25.03'N	83°27.14'N	09:40:38	23.4	147.5	223.1	02m09.5s
005°22.5'E	84°30.07'N	82°24.73'N	83°26.88'N	09:40:39	23.4	147.7	223.1	02m09.5s
005°30.0'E	84°29.85'N	82°24.42'N	83°26.61'N	09:40:40	23.5	147.8	223.1	02m09.5s
005°37.5'E	84°29.62'N	82°24.11'N	83°26.34'N	09:40:42	23.5	147.9	223.2	02m09.6s
005°45.0'E	84°29.38'N	82°23.80'N	83°26.06'N	09:40:43	23.5	148.1	223.2	02m09.6s
005°52.5'E	84°29.15'N	82°23.48'N	83°25.79'N	09:40:44	23.5	148.2	223.2	02m09.6s
006°00.0'E	84°28.92'N	82°23.17'N	83°25.51'N	09:40:45	23.5	148.3	223.2	02m09.6s
006°07.5'E	84°28.68'N	82°22.85'N	83°25.23'N	09:40:47	23.5	148.5	223.2	02m09.6s
006°15.0'E	84°28.44'N	82°22.53'N	83°24.95'N	09:40:48	23.5	148.6	223.2	02m09.7s
006°22.5'E	84°28.20'N	82°22.20'N	83°24.67'N	09:40:49	23.5	148.7	223.2	02m09.7s
006°30.0'E	84°27.96'N	82°21.88'N	83°24.38'N	09:40:50	23.6	148.9	223.2	02m09.7s
006°37.5'E	84°27.71'N	82°21.55'N	83°24.10'N	09:40:52	23.6	149.0	223.2	02m09.7s
006°45.0'E	84°27.47'N	82°21.22'N	83°23.81'N	09:40:53	23.6	149.1	223.2	02m09.8s
006°52.5'E	84°27.22'N	82°20.88'N	83°23.52'N	09:40:54	23.6	149.3	223.2	02m09.8s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
007°00.0'E	84°26.97'N	82°20.55'N	83°23.22'N	09:40:55	23.6	149.4	223.2	02m09.8s
007°07.5'E	84°26.72'N	82°20.21'N	83°22.93'N	09:40:57	23.6	149.5	223.2	02m09.8s
007°15.0'E	84°26.47'N	82°19.87'N	83°22.63'N	09:40:58	23.6	149.7	223.2	02m09.8s
007°22.5'E	84°26.21'N	82°19.53'N	83°22.33'N	09:40:59	23.6	149.8	223.2	02m09.9s
007°30.0'E	84°25.95'N	82°19.18'N	83°22.03'N	09:41:01	23.6	149.9	223.2	02m09.9s
007°37.5'E	84°25.70'N	82°18.84'N	83°21.73'N	09:41:02	23.7	150.1	223.2	02m09.9s
007°45.0'E	84°25.44'N	82°18.49'N	83°21.42'N	09:41:03	23.7	150.2	223.3	02m09.9s
007°52.5'E	84°25.17'N	82°18.13'N	83°21.11'N	09:41:04	23.7	150.3	223.3	02m10.0s
008°00.0'E	84°24.91'N	82°17.78'N	83°20.80'N	09:41:06	23.7	150.5	223.3	02m10.0s
008°07.5'E	84°24.65'N	82°17.42'N	83°20.49'N	09:41:07	23.7	150.6	223.3	02m10.0s
008°15.0'E	84°24.38'N	82°17.06'N	83°20.18'N	09:41:08	23.7	150.7	223.3	02m10.0s
008°22.5'E	84°24.11'N	82°16.70'N	83°19.86'N	09:41:10	23.7	150.9	223.3	02m10.0s
008°30.0'E	84°23.84'N	82°16.34'N	83°19.54'N	09:41:11	23.7	151.0	223.3	02m10.1s
008°37.5'E	84°23.56'N	82°15.97'N	83°19.22'N	09:41:12	23.8	151.1	223.3	02m10.1s
008°45.0'E	84°23.29'N	82°15.60'N	83°18.90'N	09:41:14	23.8	151.3	223.3	02m10.1s
008°52.5'E	84°23.01'N	82°15.23'N	83°18.57'N	09:41:15	23.8	151.4	223.3	02m10.1s
009°00.0'E	84°22.73'N	82°14.86'N	83°18.25'N	09:41:16	23.8	151.6	223.3	02m10.2s
009°07.5'E	84°22.45'N	82°14.48'N	83°17.92'N	09:41:18	23.8	151.7	223.3	02m10.2s
009°15.0'E	84°22.17'N	82°14.10'N	83°17.59'N	09:41:19	23.8	151.8	223.3	02m10.2s
009°22.5'E	84°21.89'N	82°13.72'N	83°17.25'N	09:41:20	23.8	152.0	223.3	02m10.2s
009°30.0'E	84°21.60'N	82°13.33'N	83°16.92'N	09:41:22	23.8	152.1	223.3	02m10.2s
009°37.5'E	84°21.31'N	82°12.95'N	83°16.58'N	09:41:23	23.9	152.2	223.3	02m10.3s
009°45.0'E	84°21.02'N	82°12.56'N	83°16.24'N	09:41:24	23.9	152.4	223.3	02m10.3s
009°52.5'E	84°20.73'N	82°12.17'N	83°15.89'N	09:41:26	23.9	152.5	223.4	02m10.3s
010°00.0'E	84°20.44'N	82°11.77'N	83°15.55'N	09:41:27	23.9	152.6	223.4	02m10.3s
010°07.5'E	84°20.14'N	82°11.37'N	83°15.20'N	09:41:28	23.9	152.8	223.4	02m10.3s
010°15.0'E	84°19.84'N	82°10.98'N	83°14.85'N	09:41:30	23.9	152.9	223.4	02m10.4s
010°22.5'E	84°19.55'N	82°10.57'N	83°14.50'N	09:41:31	23.9	153.0	223.4	02m10.4s
010°30.0'E	84°19.24'N	82°10.17'N	83°14.15'N	09:41:32	23.9	153.2	223.4	02m10.4s
010°37.5'E	84°18.94'N	82°09.76'N	83°13.79'N	09:41:34	24.0	153.3	223.4	02m10.4s
010°45.0'E	84°18.63'N	82°09.35'N	83°13.43'N	09:41:35	24.0	153.4	223.4	02m10.5s
010°52.5'E	84°18.33'N	82°08.94'N	83°13.07'N	09:41:36	24.0	153.6	223.4	02m10.5s
011°00.0'E	84°18.02'N	82°08.52'N	83°12.71'N	09:41:38	24.0	153.7	223.4	02m10.5s
011°07.5'E	84°17.71'N	82°08.11'N	83°12.34'N	09:41:39	24.0	153.8	223.4	02m10.5s
011°15.0'E	84°17.39'N	82°07.69'N	83°11.97'N	09:41:40	24.0	154.0	223.4	02m10.6s
011°22.5'E	84°17.08'N	82°07.26'N	83°11.60'N	09:41:42	24.0	154.1	223.4	02m10.6s
011°30.0'E	84°16.76'N	82°06.84'N	83°11.23'N	09:41:43	24.0	154.2	223.4	02m10.6s
011°37.5'E	84°16.44'N	82°06.41'N	83°10.86'N	09:41:44	24.0	154.4	223.4	02m10.6s
011°45.0'E	84°16.12'N	82°05.98'N	83°10.48'N	09:41:46	24.1	154.5	223.4	02m10.6s
011°52.5'E	84°15.80'N	82°05.55'N	83°10.10'N	09:41:47	24.1	154.6	223.5	02m10.7s
012°00.0'E	84°15.47'N	82°05.11'N	83°09.72'N	09:41:49	24.1	154.8	223.5	02m10.7s
012°07.5'E	84°15.14'N	82°04.67'N	83°09.33'N	09:41:50	24.1	154.9	223.5	02m10.7s
012°15.0'E	84°14.81'N	82°04.23'N	83°08.95'N	09:41:51	24.1	155.1	223.5	02m10.7s
012°22.5'E	84°14.48'N	82°03.79'N	83°08.56'N	09:41:53	24.1	155.2	223.5	02m10.8s
012°30.0'E	84°14.15'N	82°03.34'N	83°08.17'N	09:41:54	24.1	155.3	223.5	02m10.8s
012°37.5'E	84°13.81'N	82°02.89'N	83°07.77'N	09:41:56	24.1	155.5	223.5	02m10.8s
012°45.0'E	84°13.47'N	82°02.44'N	83°07.38'N	09:41:57	24.2	155.6	223.5	02m10.8s
012°52.5'E	84°13.13'N	82°01.98'N	83°06.98'N	09:41:58	24.2	155.7	223.5	02m10.8s
013°00.0'E	84°12.79'N	82°01.52'N	83°06.58'N	09:42:00	24.2	155.9	223.5	02m10.9s
013°07.5'E	84°12.45'N	82°01.06'N	83°06.17'N	09:42:01	24.2	156.0	223.5	02m10.9s
013°15.0'E	84°12.10'N	82°00.60'N	83°05.77'N	09:42:03	24.2	156.1	223.5	02m10.9s
013°22.5'E	84°11.75'N	82°00.13'N	83°05.36'N	09:42:04	24.2	156.3	223.5	02m10.9s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
013°30.0'E	84°11.40'N	81°59.66'N	83°04.95'N	09:42:05	24.2	156.4	223.5	02m11.0s
013°37.5'E	84°11.05'N	81°59.19'N	83°04.53'N	09:42:07	24.2	156.5	223.5	02m11.0s
013°45.0'E	84°10.69'N	81°58.72'N	83°04.12'N	09:42:08	24.3	156.7	223.5	02m11.0s
013°52.5'E	84°10.34'N	81°58.24'N	83°03.70'N	09:42:10	24.3	156.8	223.6	02m11.0s
014°00.0'E	84°09.98'N	81°57.76'N	83°03.28'N	09:42:11	24.3	156.9	223.6	02m11.1s
014°07.5'E	84°09.62'N	81°57.27'N	83°02.85'N	09:42:13	24.3	157.1	223.6	02m11.1s
014°15.0'E	84°09.25'N	81°56.79'N	83°02.43'N	09:42:14	24.3	157.2	223.6	02m11.1s
014°22.5'E	84°08.89'N	81°56.30'N	83°02.00'N	09:42:16	24.3	157.3	223.6	02m11.1s
014°30.0'E	84°08.52'N	81°55.81'N	83°01.57'N	09:42:17	24.3	157.5	223.6	02m11.1s
014°37.5'E	84°08.15'N	81°55.31'N	83°01.13'N	09:42:18	24.4	157.6	223.6	02m11.2s
014°45.0'E	84°07.78'N	81°54.81'N	83°00.70'N	09:42:20	24.4	157.8	223.6	02m11.2s
014°52.5'E	84°07.40'N	81°54.31'N	83°00.26'N	09:42:21	24.4	157.9	223.6	02m11.2s
015°00.0'E	84°07.02'N	81°53.81'N	82°59.82'N	09:42:23	24.4	158.0	223.6	02m11.2s
015°07.5'E	84°06.65'N	81°53.30'N	82°59.37'N	09:42:24	24.4	158.2	223.6	02m11.3s
015°15.0'E	84°06.26'N	81°52.79'N	82°58.92'N	09:42:26	24.4	158.3	223.6	02m11.3s
015°22.5'E	84°05.88'N	81°52.28'N	82°58.48'N	09:42:27	24.4	158.4	223.6	02m11.3s
015°30.0'E	84°05.49'N	81°51.76'N	82°58.02'N	09:42:29	24.4	158.6	223.6	02m11.3s
015°37.5'E	84°05.11'N	81°51.24'N	82°57.57'N	09:42:30	24.5	158.7	223.6	02m11.4s
015°45.0'E	84°04.71'N	81°50.72'N	82°57.11'N	09:42:32	24.5	158.8	223.6	02m11.4s
015°52.5'E	84°04.32'N	81°50.20'N	82°56.65'N	09:42:33	24.5	159.0	223.7	02m11.4s
016°00.0'E	84°03.93'N	81°49.67'N	82°56.19'N	09:42:35	24.5	159.1	223.7	02m11.4s
016°07.5'E	84°03.53'N	81°49.14'N	82°55.72'N	09:42:36	24.5	159.2	223.7	02m11.5s
016°15.0'E	84°03.13'N	81°48.60'N	82°55.25'N	09:42:38	24.5	159.4	223.7	02m11.5s
016°22.5'E	84°02.73'N	81°48.07'N	82°54.78'N	09:42:39	24.5	159.5	223.7	02m11.5s
016°30.0'E	84°02.32'N	81°47.53'N	82°54.31'N	09:42:41	24.5	159.7	223.7	02m11.5s
016°37.5'E	84°01.91'N	81°46.98'N	82°53.83'N	09:42:42	24.6	159.8	223.7	02m11.5s
016°45.0'E	84°01.51'N	81°46.44'N	82°53.35'N	09:42:44	24.6	159.9	223.7	02m11.6s
016°52.5'E	84°01.09'N	81°45.89'N	82°52.87'N	09:42:45	24.6	160.1	223.7	02m11.6s
017°00.0'E	84°00.68'N	81°45.33'N	82°52.38'N	09:42:47	24.6	160.2	223.7	02m11.6s
017°07.5'E	84°00.26'N	81°44.78'N	82°51.90'N	09:42:48	24.6	160.3	223.7	02m11.6s
017°15.0'E	83°59.84'N	81°44.22'N	82°51.41'N	09:42:50	24.6	160.5	223.7	02m11.7s
017°22.5'E	83°59.42'N	81°43.66'N	82°50.91'N	09:42:51	24.6	160.6	223.7	02m11.7s
017°30.0'E	83°59.00'N	81°43.09'N	82°50.42'N	09:42:53	24.6	160.7	223.7	02m11.7s
017°37.5'E	83°58.57'N	81°42.52'N	82°49.92'N	09:42:54	24.7	160.9	223.8	02m11.7s
017°45.0'E	83°58.14'N	81°41.95'N	82°49.42'N	09:42:56	24.7	161.0	223.8	02m11.8s
017°52.5'E	83°57.71'N	81°41.38'N	82°48.91'N	09:42:58	24.7	161.2	223.8	02m11.8s
018°00.0'E	83°57.28'N	81°40.80'N	82°48.40'N	09:42:59	24.7	161.3	223.8	02m11.8s
018°07.5'E	83°56.84'N	81°40.22'N	82°47.89'N	09:43:01	24.7	161.4	223.8	02m11.8s
018°15.0'E	83°56.40'N	81°39.63'N	82°47.38'N	09:43:02	24.7	161.6	223.8	02m11.9s
018°22.5'E	83°55.96'N	81°39.04'N	82°46.86'N	09:43:04	24.7	161.7	223.8	02m11.9s
018°30.0'E	83°55.52'N	81°38.45'N	82°46.34'N	09:43:05	24.8	161.8	223.8	02m11.9s
018°37.5'E	83°55.07'N	81°37.86'N	82°45.82'N	09:43:07	24.8	162.0	223.8	02m11.9s
018°45.0'E	83°54.62'N	81°37.26'N	82°45.29'N	09:43:09	24.8	162.1	223.8	02m12.0s
018°52.5'E	83°54.17'N	81°36.66'N	82°44.77'N	09:43:10	24.8	162.2	223.8	02m12.0s
019°00.0'E	83°53.71'N	81°36.05'N	82°44.23'N	09:43:12	24.8	162.4	223.8	02m12.0s
019°07.5'E	83°53.26'N	81°35.44'N	82°43.70'N	09:43:13	24.8	162.5	223.8	02m12.0s
019°15.0'E	83°52.80'N	81°34.83'N	82°43.16'N	09:43:15	24.8	162.7	223.8	02m12.1s
019°22.5'E	83°52.33'N	81°34.21'N	82°42.62'N	09:43:17	24.8	162.8	223.8	02m12.1s
019°30.0'E	83°51.87'N	81°33.60'N	82°42.08'N	09:43:18	24.9	162.9	223.9	02m12.1s
019°37.5'E	83°51.40'N	81°32.97'N	82°41.53'N	09:43:20	24.9	163.1	223.9	02m12.1s
019°45.0'E	83°50.93'N	81°32.35'N	82°40.98'N	09:43:21	24.9	163.2	223.9	02m12.2s
019°52.5'E	83°50.46'N	81°31.72'N	82°40.43'N	09:43:23	24.9	163.3	223.9	02m12.2s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
020°00.0'E	83°49.98'N	81°31.09'N	82°39.87'N	09:43:25	24.9	163.5	223.9	02m12.2s
020°07.5'E	83°49.50'N	81°30.45'N	82°39.32'N	09:43:26	24.9	163.6	223.9	02m12.2s
020°15.0'E	83°49.02'N	81°29.81'N	82°38.75'N	09:43:28	24.9	163.8	223.9	02m12.3s
020°22.5'E	83°48.54'N	81°29.17'N	82°38.19'N	09:43:30	25.0	163.9	223.9	02m12.3s
020°30.0'E	83°48.05'N	81°28.52'N	82°37.62'N	09:43:31	25.0	164.0	223.9	02m12.3s
020°37.5'E	83°47.56'N	81°27.87'N	82°37.05'N	09:43:33	25.0	164.2	223.9	02m12.3s
020°45.0'E	83°47.07'N	81°27.22'N	82°36.47'N	09:43:35	25.0	164.3	223.9	02m12.4s
020°52.5'E	83°46.58'N	81°26.56'N	82°35.89'N	09:43:36	25.0	164.4	223.9	02m12.4s
021°00.0'E	83°46.08'N	81°25.90'N	82°35.31'N	09:43:38	25.0	164.6	223.9	02m12.4s
021°07.5'E	83°45.58'N	81°25.23'N	82°34.73'N	09:43:40	25.0	164.7	224.0	02m12.4s
021°15.0'E	83°45.08'N	81°24.56'N	82°34.14'N	09:43:41	25.1	164.9	224.0	02m12.5s
021°22.5'E	83°44.57'N	81°23.89'N	82°33.55'N	09:43:43	25.1	165.0	224.0	02m12.5s
021°30.0'E	83°44.06'N	81°23.21'N	82°32.96'N	09:43:45	25.1	165.1	224.0	02m12.5s
021°37.5'E	83°43.55'N	81°22.53'N	82°32.36'N	09:43:46	25.1	165.3	224.0	02m12.5s
021°45.0'E	83°43.03'N	81°21.85'N	82°31.76'N	09:43:48	25.1	165.4	224.0	02m12.6s
021°52.5'E	83°42.52'N	81°21.16'N	82°31.15'N	09:43:50	25.1	165.5	224.0	02m12.6s
022°00.0'E	83°42.00'N	81°20.47'N	82°30.54'N	09:43:51	25.1	165.7	224.0	02m12.6s
022°07.5'E	83°41.47'N	81°19.78'N	82°29.93'N	09:43:53	25.2	165.8	224.0	02m12.6s
022°15.0'E	83°40.95'N	81°19.08'N	82°29.32'N	09:43:55	25.2	166.0	224.0	02m12.7s
022°22.5'E	83°40.42'N	81°18.38'N	82°28.70'N	09:43:57	25.2	166.1	224.0	02m12.7s
022°30.0'E	83°39.89'N	81°17.67'N	82°28.08'N	09:43:58	25.2	166.2	224.0	02m12.7s
022°37.5'E	83°39.35'N	81°16.96'N	82°27.45'N	09:44:00	25.2	166.4	224.0	02m12.7s
022°45.0'E	83°38.81'N	81°16.25'N	82°26.83'N	09:44:02	25.2	166.5	224.0	02m12.8s
022°52.5'E	83°38.27'N	81°15.53'N	82°26.20'N	09:44:04	25.2	166.6	224.1	02m12.8s
023°00.0'E	83°37.73'N	81°14.81'N	82°25.56'N	09:44:05	25.3	166.8	224.1	02m12.8s
023°07.5'E	83°37.18'N	81°14.08'N	82°24.92'N	09:44:07	25.3	166.9	224.1	02m12.8s
023°15.0'E	83°36.63'N	81°13.35'N	82°24.28'N	09:44:09	25.3	167.1	224.1	02m12.9s
023°22.5'E	83°36.07'N	81°12.62'N	82°23.63'N	09:44:11	25.3	167.2	224.1	02m12.9s
023°30.0'E	83°35.52'N	81°11.88'N	82°22.98'N	09:44:12	25.3	167.3	224.1	02m12.9s
023°37.5'E	83°34.96'N	81°11.14'N	82°22.33'N	09:44:14	25.3	167.5	224.1	02m13.0s
023°45.0'E	83°34.40'N	81°10.39'N	82°21.67'N	09:44:16	25.3	167.6	224.1	02m13.0s
023°52.5'E	83°33.83'N	81°09.64'N	82°21.01'N	09:44:18	25.4	167.7	224.1	02m13.0s
024°00.0'E	83°33.26'N	81°08.89'N	82°20.35'N	09:44:20	25.4	167.9	224.1	02m13.0s
024°07.5'E	83°32.69'N	81°08.13'N	82°19.68'N	09:44:21	25.4	168.0	224.1	02m13.1s
024°15.0'E	83°32.11'N	81°07.37'N	82°19.01'N	09:44:23	25.4	168.2	224.1	02m13.1s
024°22.5'E	83°31.53'N	81°06.60'N	82°18.34'N	09:44:25	25.4	168.3	224.2	02m13.1s
024°30.0'E	83°30.95'N	81°05.83'N	82°17.66'N	09:44:27	25.4	168.4	224.2	02m13.1s
024°37.5'E	83°30.37'N	81°05.06'N	82°16.98'N	09:44:29	25.4	168.6	224.2	02m13.2s
024°45.0'E	83°29.78'N	81°04.28'N	82°16.29'N	09:44:31	25.5	168.7	224.2	02m13.2s
024°52.5'E	83°29.19'N	81°03.50'N	82°15.60'N	09:44:32	25.5	168.9	224.2	02m13.2s
025°00.0'E	83°28.59'N	81°02.71'N	82°14.91'N	09:44:34	25.5	169.0	224.2	02m13.2s
025°07.5'E	83°27.99'N	81°01.92'N	82°14.21'N	09:44:36	25.5	169.1	224.2	02m13.3s
025°15.0'E	83°27.39'N	81°01.12'N	82°13.51'N	09:44:38	25.5	169.3	224.2	02m13.3s
025°22.5'E	83°26.78'N	81°00.32'N	82°12.80'N	09:44:40	25.5	169.4	224.2	02m13.3s
025°30.0'E	83°26.18'N	80°59.52'N	82°12.09'N	09:44:42	25.5	169.5	224.2	02m13.4s
025°37.5'E	83°25.56'N	80°58.71'N	82°11.38'N	09:44:44	25.6	169.7	224.2	02m13.4s
025°45.0'E	83°24.95'N	80°57.89'N	82°10.66'N	09:44:45	25.6	169.8	224.2	02m13.4s
025°52.5'E	83°24.33'N	80°57.08'N	82°09.94'N	09:44:47	25.6	170.0	224.3	02m13.4s
026°00.0'E	83°23.71'N	80°56.25'N	82°09.22'N	09:44:49	25.6	170.1	224.3	02m13.5s
026°07.5'E	83°23.08'N	80°55.43'N	82°08.49'N	09:44:51	25.6	170.2	224.3	02m13.5s
026°15.0'E	83°22.45'N	80°54.60'N	82°07.76'N	09:44:53	25.6	170.4	224.3	02m13.5s
026°22.5'E	83°21.82'N	80°53.76'N	82°07.02'N	09:44:55	25.7	170.5	224.3	02m13.5s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
026°30.0'E	83°21.18'N	80°52.92'N	82°06.28'N	09:44:57	25.7	170.7	224.3	02m13.6s
026°37.5'E	83°20.54'N	80°52.08'N	82°05.54'N	09:44:59	25.7	170.8	224.3	02m13.6s
026°45.0'E	83°19.90'N	80°51.23'N	82°04.79'N	09:45:01	25.7	170.9	224.3	02m13.6s
026°52.5'E	83°19.25'N	80°50.37'N	82°04.03'N	09:45:03	25.7	171.1	224.3	02m13.7s
027°00.0'E	83°18.60'N	80°49.51'N	82°03.28'N	09:45:05	25.7	171.2	224.3	02m13.7s
027°07.5'E	83°17.95'N	80°48.65'N	82°02.52'N	09:45:07	25.7	171.4	224.3	02m13.7s
027°15.0'E	83°17.29'N	80°47.78'N	82°01.75'N	09:45:09	25.8	171.5	224.3	02m13.7s
027°22.5'E	83°16.63'N	80°46.91'N	82°00.98'N	09:45:11	25.8	171.6	224.4	02m13.8s
027°30.0'E	83°15.96'N	80°46.03'N	82°00.21'N	09:45:13	25.8	171.8	224.4	02m13.8s
027°37.5'E	83°15.30'N	80°45.15'N	81°59.43'N	09:45:15	25.8	171.9	224.4	02m13.8s
027°45.0'E	83°14.62'N	80°44.27'N	81°58.65'N	09:45:17	25.8	172.1	224.4	02m13.9s
027°52.5'E	83°13.95'N	80°43.37'N	81°57.86'N	09:45:19	25.8	172.2	224.4	02m13.9s
028°00.0'E	83°13.27'N	80°42.48'N	81°57.07'N	09:45:21	25.9	172.3	224.4	02m13.9s
028°07.5'E	83°12.58'N	80°41.58'N	81°56.27'N	09:45:23	25.9	172.5	224.4	02m13.9s
028°15.0'E	83°11.90'N	80°40.67'N	81°55.47'N	09:45:25	25.9	172.6	224.4	02m14.0s
028°22.5'E	83°11.20'N	80°39.76'N	81°54.67'N	09:45:27	25.9	172.8	224.4	02m14.0s
028°30.0'E	83°10.51'N	80°38.84'N	81°53.86'N	09:45:29	25.9	172.9	224.4	02m14.0s
028°37.5'E	83°09.81'N	80°37.92'N	81°53.05'N	09:45:31	25.9	173.0	224.4	02m14.1s
028°45.0'E	83°09.11'N	80°37.00'N	81°52.23'N	09:45:33	25.9	173.2	224.5	02m14.1s
028°52.5'E	83°08.40'N	80°36.07'N	81°51.41'N	09:45:35	26.0	173.3	224.5	02m14.1s
029°00.0'E	83°07.69'N	80°35.13'N	81°50.58'N	09:45:37	26.0	173.5	224.5	02m14.1s
029°07.5'E	83°06.97'N	80°34.19'N	81°49.75'N	09:45:39	26.0	173.6	224.5	02m14.2s
029°15.0'E	83°06.25'N	80°33.25'N	81°48.92'N	09:45:41	26.0	173.7	224.5	02m14.2s
029°22.5'E	83°05.53'N	80°32.29'N	81°48.08'N	09:45:43	26.0	173.9	224.5	02m14.2s
029°30.0'E	83°04.80'N	80°31.34'N	81°47.23'N	09:45:45	26.0	174.0	224.5	02m14.3s
029°37.5'E	83°04.07'N	80°30.38'N	81°46.38'N	09:45:47	26.1	174.2	224.5	02m14.3s
029°45.0'E	83°03.34'N	80°29.41'N	81°45.53'N	09:45:49	26.1	174.3	224.5	02m14.3s
029°52.5'E	83°02.60'N	80°28.44'N	81°44.67'N	09:45:52	26.1	174.5	224.5	02m14.3s
030°00.0'E	83°01.85'N	80°27.46'N	81°43.81'N	09:45:54	26.1	174.6	224.5	02m14.4s
030°07.5'E	83°01.11'N	80°26.48'N	81°42.94'N	09:45:56	26.1	174.7	224.6	02m14.4s
030°15.0'E	83°00.35'N	80°25.49'N	81°42.07'N	09:45:58	26.1	174.9	224.6	02m14.4s
030°22.5'E	82°59.60'N	80°24.50'N	81°41.19'N	09:46:00	26.2	175.0	224.6	02m14.5s
030°30.0'E	82°58.84'N	80°23.50'N	81°40.31'N	09:46:02	26.2	175.2	224.6	02m14.5s
030°37.5'E	82°58.07'N	80°22.50'N	81°39.42'N	09:46:05	26.2	175.3	224.6	02m14.5s
030°45.0'E	82°57.31'N	80°21.49'N	81°38.53'N	09:46:07	26.2	175.4	224.6	02m14.6s
030°52.5'E	82°56.53'N	80°20.47'N	81°37.63'N	09:46:09	26.2	175.6	224.6	02m14.6s
031°00.0'E	82°55.75'N	80°19.45'N	81°36.73'N	09:46:11	26.2	175.7	224.6	02m14.6s
031°07.5'E	82°54.97'N	80°18.43'N	81°35.82'N	09:46:13	26.3	175.9	224.6	02m14.6s
031°15.0'E	82°54.19'N	80°17.40'N	81°34.91'N	09:46:16	26.3	176.0	224.6	02m14.7s
031°22.5'E	82°53.40'N	80°16.36'N	81°33.99'N	09:46:18	26.3	176.2	224.7	02m14.7s
031°30.0'E	82°52.60'N	80°15.32'N	81°33.07'N	09:46:20	26.3	176.3	224.7	02m14.7s
031°37.5'E	82°51.80'N	80°14.27'N	81°32.14'N	09:46:22	26.3	176.4	224.7	02m14.8s
031°45.0'E	82°51.00'N	80°13.22'N	81°31.21'N	09:46:24	26.3	176.6	224.7	02m14.8s
031°52.5'E	82°50.19'N	80°12.16'N	81°30.27'N	09:46:27	26.4	176.7	224.7	02m14.8s
032°00.0'E	82°49.37'N	80°11.09'N	81°29.33'N	09:46:29	26.4	176.9	224.7	02m14.9s
032°07.5'E	82°48.56'N	80°10.02'N	81°28.38'N	09:46:31	26.4	177.0	224.7	02m14.9s
032°15.0'E	82°47.73'N	80°08.94'N	81°27.43'N	09:46:34	26.4	177.1	224.7	02m14.9s
032°22.5'E	82°46.91'N	80°07.86'N	81°26.47'N	09:46:36	26.4	177.3	224.7	02m15.0s
032°30.0'E	82°46.07'N	80°06.77'N	81°25.51'N	09:46:38	26.4	177.4	224.7	02m15.0s
032°37.5'E	82°45.24'N	80°05.68'N	81°24.54'N	09:46:40	26.5	177.6	224.8	02m15.0s
032°45.0'E	82°44.40'N	80°04.58'N	81°23.56'N	09:46:43	26.5	177.7	224.8	02m15.0s
032°52.5'E	82°43.55'N	80°03.47'N	81°22.58'N	09:46:45	26.5	177.9	224.8	02m15.1s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
033°00.0'E	82°42.70'N	80°02.36'N	81°21.60'N	09:46:47	26.5	178.0	224.8	02m15.1s
033°07.5'E	82°41.84'N	80°01.24'N	81°20.61'N	09:46:50	26.5	178.1	224.8	02m15.1s
033°15.0'E	82°40.98'N	80°00.12'N	81°19.61'N	09:46:52	26.5	178.3	224.8	02m15.2s
033°22.5'E	82°40.12'N	79°58.99'N	81°18.61'N	09:46:55	26.6	178.4	224.8	02m15.2s
033°30.0'E	82°39.25'N	79°57.85'N	81°17.60'N	09:46:57	26.6	178.6	224.8	02m15.2s
033°37.5'E	82°38.37'N	79°56.71'N	81°16.59'N	09:46:59	26.6	178.7	224.8	02m15.3s
033°45.0'E	82°37.49'N	79°55.56'N	81°15.57'N	09:47:02	26.6	178.9	224.9	02m15.3s
033°52.5'E	82°36.61'N	79°54.40'N	81°14.54'N	09:47:04	26.6	179.0	224.9	02m15.3s
034°00.0'E	82°35.72'N	79°53.24'N	81°13.52'N	09:47:07	26.6	179.2	224.9	02m15.4s
034°07.5'E	82°34.82'N	79°52.07'N	81°12.48'N	09:47:09	26.7	179.3	224.9	02m15.4s
034°15.0'E	82°33.92'N	79°50.89'N	81°11.44'N	09:47:11	26.7	179.4	224.9	02m15.4s
034°22.5'E	82°33.02'N	79°49.71'N	81°10.39'N	09:47:14	26.7	179.6	224.9	02m15.5s
034°30.0'E	82°32.10'N	79°48.53'N	81°09.34'N	09:47:16	26.7	179.7	224.9	02m15.5s
034°37.5'E	82°31.19'N	79°47.33'N	81°08.28'N	09:47:19	26.7	179.9	224.9	02m15.5s
034°45.0'E	82°30.27'N	79°46.13'N	81°07.21'N	09:47:21	26.7	180.0	224.9	02m15.6s
034°52.5'E	82°29.34'N	79°44.92'N	81°06.14'N	09:47:24	26.8	180.2	224.9	02m15.6s
035°00.0'E	82°28.41'N	79°43.71'N	81°05.06'N	09:47:26	26.8	180.3	225.0	02m15.6s
035°07.5'E	82°27.47'N	79°42.49'N	81°03.98'N	09:47:29	26.8	180.4	225.0	02m15.7s
035°15.0'E	82°26.53'N	79°41.26'N	81°02.89'N	09:47:31	26.8	180.6	225.0	02m15.7s
035°22.5'E	82°25.58'N	79°40.03'N	81°01.80'N	09:47:34	26.8	180.7	225.0	02m15.7s
035°30.0'E	82°24.63'N	79°38.79'N	81°00.70'N	09:47:37	26.9	180.9	225.0	02m15.8s
035°37.5'E	82°23.67'N	79°37.54'N	80°59.59'N	09:47:39	26.9	181.0	225.0	02m15.8s
035°45.0'E	82°22.70'N	79°36.28'N	80°58.47'N	09:47:42	26.9	181.2	225.0	02m15.8s
035°52.5'E	82°21.73'N	79°35.02'N	80°57.35'N	09:47:44	26.9	181.3	225.0	02m15.9s
036°00.0'E	82°20.76'N	79°33.75'N	80°56.23'N	09:47:47	26.9	181.5	225.1	02m15.9s
036°07.5'E	82°19.78'N	79°32.48'N	80°55.09'N	09:47:49	26.9	181.6	225.1	02m15.9s
036°15.0'E	82°18.79'N	79°31.20'N	80°53.95'N	09:47:52	27.0	181.8	225.1	02m16.0s
036°22.5'E	82°17.80'N	79°29.91'N	80°52.81'N	09:47:55	27.0	181.9	225.1	02m16.0s
036°30.0'E	82°16.80'N	79°28.61'N	80°51.66'N	09:47:57	27.0	182.0	225.1	02m16.0s
036°37.5'E	82°15.79'N	79°27.31'N	80°50.50'N	09:48:00	27.0	182.2	225.1	02m16.1s
036°45.0'E	82°14.78'N	79°25.99'N	80°49.33'N	09:48:03	27.0	182.3	225.1	02m16.1s
036°52.5'E	82°13.77'N	79°24.68'N	80°48.16'N	09:48:05	27.1	182.5	225.1	02m16.1s
037°00.0'E	82°12.75'N	79°23.35'N	80°46.98'N	09:48:08	27.1	182.6	225.1	02m16.2s
037°07.5'E	82°11.72'N	79°22.02'N	80°45.80'N	09:48:11	27.1	182.8	225.2	02m16.2s
037°15.0'E	82°10.69'N	79°20.68'N	80°44.61'N	09:48:13	27.1	182.9	225.2	02m16.2s
037°22.5'E	82°09.65'N	79°19.33'N	80°43.41'N	09:48:16	27.1	183.1	225.2	02m16.3s
037°30.0'E	82°08.60'N	79°17.97'N	80°42.20'N	09:48:19	27.2	183.2	225.2	02m16.3s
037°37.5'E	82°07.55'N	79°16.61'N	80°40.99'N	09:48:22	27.2	183.4	225.2	02m16.3s
037°45.0'E	82°06.49'N	79°15.24'N	80°39.77'N	09:48:24	27.2	183.5	225.2	02m16.4s
037°52.5'E	82°05.43'N	79°13.86'N	80°38.54'N	09:48:27	27.2	183.7	225.2	02m16.4s
038°00.0'E	82°04.36'N	79°12.47'N	80°37.31'N	09:48:30	27.2	183.8	225.2	02m16.4s
038°07.5'E	82°03.28'N	79°11.08'N	80°36.07'N	09:48:33	27.2	183.9	225.3	02m16.5s
038°15.0'E	82°02.20'N	79°09.68'N	80°34.82'N	09:48:36	27.3	184.1	225.3	02m16.5s
038°22.5'E	82°01.11'N	79°08.27'N	80°33.57'N	09:48:39	27.3	184.2	225.3	02m16.5s
038°30.0'E	82°00.01'N	79°06.85'N	80°32.31'N	09:48:41	27.3	184.4	225.3	02m16.6s
038°37.5'E	81°58.91'N	79°05.43'N	80°31.04'N	09:48:44	27.3	184.5	225.3	02m16.6s
038°45.0'E	81°57.80'N	79°03.99'N	80°29.76'N	09:48:47	27.3	184.7	225.3	02m16.6s
038°52.5'E	81°56.68'N	79°02.55'N	80°28.48'N	09:48:50	27.4	184.8	225.3	02m16.7s
039°00.0'E	81°55.56'N	79°01.10'N	80°27.19'N	09:48:53	27.4	185.0	225.4	02m16.7s
039°07.5'E	81°54.43'N	78°59.65'N	80°25.89'N	09:48:56	27.4	185.1	225.4	02m16.7s
039°15.0'E	81°53.30'N	78°58.18'N	80°24.58'N	09:48:59	27.4	185.3	225.4	02m16.8s
039°22.5'E	81°52.16'N	78°56.71'N	80°23.27'N	09:49:02	27.4	185.4	225.4	02m16.8s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
039°30.0'E	81°51.01'N	78°55.22'N	80°21.95'N	09:49:05	27.5	185.6	225.4	02m16.9s
039°37.5'E	81°49.85'N	78°53.73'N	80°20.62'N	09:49:08	27.5	185.7	225.4	02m16.9s
039°45.0'E	81°48.69'N	78°52.23'N	80°19.29'N	09:49:11	27.5	185.9	225.4	02m16.9s
039°52.5'E	81°47.52'N	78°50.73'N	80°17.94'N	09:49:14	27.5	186.0	225.4	02m17.0s
040°00.0'E	81°46.34'N	78°49.21'N	80°16.59'N	09:49:17	27.5	186.2	225.5	02m17.0s
040°07.5'E	81°45.16'N	78°47.69'N	80°15.23'N	09:49:20	27.6	186.3	225.5	02m17.0s
040°15.0'E	81°43.97'N	78°46.15'N	80°13.86'N	09:49:23	27.6	186.5	225.5	02m17.1s
040°22.5'E	81°42.77'N	78°44.61'N	80°12.49'N	09:49:26	27.6	186.6	225.5	02m17.1s
040°30.0'E	81°41.57'N	78°43.06'N	80°11.10'N	09:49:29	27.6	186.8	225.5	02m17.1s
040°37.5'E	81°40.36'N	78°41.50'N	80°09.71'N	09:49:32	27.6	186.9	225.5	02m17.2s
040°45.0'E	81°39.14'N	78°39.93'N	80°08.31'N	09:49:35	27.7	187.1	225.5	02m17.2s
040°52.5'E	81°37.91'N	78°38.36'N	80°06.91'N	09:49:38	27.7	187.2	225.6	02m17.3s
041°00.0'E	81°36.68'N	78°36.77'N	80°05.49'N	09:49:41	27.7	187.4	225.6	02m17.3s
041°07.5'E	81°35.44'N	78°35.18'N	80°04.07'N	09:49:44	27.7	187.5	225.6	02m17.3s
041°15.0'E	81°34.19'N	78°33.57'N	80°02.63'N	09:49:48	27.7	187.7	225.6	02m17.4s
041°22.5'E	81°32.93'N	78°31.96'N	80°01.19'N	09:49:51	27.8	187.8	225.6	02m17.4s
041°30.0'E	81°31.67'N	78°30.34'N	79°59.74'N	09:49:54	27.8	188.0	225.6	02m17.4s
041°37.5'E	81°30.40'N	78°28.70'N	79°58.29'N	09:49:57	27.8	188.1	225.6	02m17.5s
041°45.0'E	81°29.12'N	78°27.06'N	79°56.82'N	09:50:00	27.8	188.3	225.7	02m17.5s
041°52.5'E	81°27.83'N	78°25.41'N	79°55.35'N	09:50:04	27.8	188.4	225.7	02m17.6s
042°00.0'E	81°26.54'N	78°23.75'N	79°53.86'N	09:50:07	27.9	188.6	225.7	02m17.6s
042°07.5'E	81°25.23'N	78°22.08'N	79°52.37'N	09:50:10	27.9	188.7	225.7	02m17.6s
042°15.0'E	81°23.92'N	78°20.40'N	79°50.87'N	09:50:14	27.9	188.9	225.7	02m17.7s
042°22.5'E	81°22.61'N	78°18.71'N	79°49.36'N	09:50:17	27.9	189.0	225.7	02m17.7s
042°30.0'E	81°21.28'N	78°17.02'N	79°47.84'N	09:50:20	28.0	189.2	225.8	02m17.7s
042°37.5'E	81°19.95'N	78°15.31'N	79°46.31'N	09:50:24	28.0	189.3	225.8	02m17.8s
042°45.0'E	81°18.60'N	78°13.59'N	79°44.78'N	09:50:27	28.0	189.5	225.8	02m17.8s
042°52.5'E	81°17.25'N	78°11.86'N	79°43.23'N	09:50:30	28.0	189.6	225.8	02m17.9s
043°00.0'E	81°15.89'N	78°10.12'N	79°41.67'N	09:50:34	28.0	189.8	225.8	02m17.9s
043°07.5'E	81°14.53'N	78°08.38'N	79°40.11'N	09:50:37	28.1	189.9	225.8	02m17.9s
043°15.0'E	81°13.15'N	78°06.62'N	79°38.54'N	09:50:41	28.1	190.1	225.9	02m18.0s
043°22.5'E	81°11.77'N	78°04.85'N	79°36.95'N	09:50:44	28.1	190.2	225.9	02m18.0s
043°30.0'E	81°10.37'N	78°03.07'N	79°35.36'N	09:50:48	28.1	190.4	225.9	02m18.1s
043°37.5'E	81°08.97'N	78°01.28'N	79°33.76'N	09:50:51	28.1	190.5	225.9	02m18.1s
043°45.0'E	81°07.56'N	77°59.48'N	79°32.15'N	09:50:55	28.2	190.7	225.9	02m18.1s
043°52.5'E	81°06.14'N	77°57.67'N	79°30.53'N	09:50:58	28.2	190.9	225.9	02m18.2s
044°00.0'E	81°04.72'N	77°55.85'N	79°28.90'N	09:51:02	28.2	191.0	225.9	02m18.2s
044°07.5'E	81°03.28'N	77°54.02'N	79°27.25'N	09:51:05	28.2	191.2	226.0	02m18.3s
044°15.0'E	81°01.83'N	77°52.18'N	79°25.60'N	09:51:09	28.3	191.3	226.0	02m18.3s
044°22.5'E	81°00.38'N	77°50.33'N	79°23.94'N	09:51:12	28.3	191.5	226.0	02m18.3s
044°30.0'E	80°58.92'N	77°48.47'N	79°22.27'N	09:51:16	28.3	191.6	226.0	02m18.4s
044°37.5'E	80°57.44'N	77°46.59'N	79°20.59'N	09:51:20	28.3	191.8	226.0	02m18.4s
044°45.0'E	80°55.96'N	77°44.71'N	79°18.90'N	09:51:23	28.3	191.9	226.1	02m18.5s
044°52.5'E	80°54.47'N	77°42.81'N	79°17.20'N	09:51:27	28.4	192.1	226.1	02m18.5s
045°00.0'E	80°52.97'N	77°40.91'N	79°15.49'N	09:51:31	28.4	192.2	226.1	02m18.5s
045°07.5'E	80°51.46'N	77°38.99'N	79°13.77'N	09:51:34	28.4	192.4	226.1	02m18.6s
045°15.0'E	80°49.94'N	77°37.06'N	79°12.04'N	09:51:38	28.4	192.6	226.1	02m18.6s
045°22.5'E	80°48.42'N	77°35.12'N	79°10.30'N	09:51:42	28.5	192.7	226.1	02m18.7s
045°30.0'E	80°46.88'N	77°33.17'N	79°08.54'N	09:51:46	28.5	192.9	226.2	02m18.7s
045°37.5'E	80°45.33'N	77°31.20'N	79°06.78'N	09:51:50	28.5	193.0	226.2	02m18.7s
045°45.0'E	80°43.77'N	77°29.23'N	79°05.01'N	09:51:53	28.5	193.2	226.2	02m18.8s
045°52.5'E	80°42.21'N	77°27.24'N	79°03.22'N	09:51:57	28.5	193.3	226.2	02m18.8s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
046°00.0'E	80°40.63'N	77°25.24'N	79°01.43'N	09:52:01	28.6	193.5	226.2	02m18.9s
046°07.5'E	80°39.04'N	77°23.23'N	78°59.62'N	09:52:05	28.6	193.6	226.2	02m18.9s
046°15.0'E	80°37.44'N	77°21.21'N	78°57.80'N	09:52:09	28.6	193.8	226.3	02m18.9s
046°22.5'E	80°35.84'N	77°19.18'N	78°55.97'N	09:52:13	28.6	194.0	226.3	02m19.0s
046°30.0'E	80°34.22'N	77°17.13'N	78°54.13'N	09:52:17	28.7	194.1	226.3	02m19.0s
046°37.5'E	80°32.59'N	77°15.07'N	78°52.28'N	09:52:21	28.7	194.3	226.3	02m19.1s
046°45.0'E	80°30.95'N	77°13.00'N	78°50.42'N	09:52:25	28.7	194.4	226.3	02m19.1s
046°52.5'E	80°29.31'N	77°10.92'N	78°48.54'N	09:52:29	28.7	194.6	226.4	02m19.2s
047°00.0'E	80°27.65'N	77°08.82'N	78°46.66'N	09:52:33	28.8	194.7	226.4	02m19.2s
047°07.5'E	80°25.98'N	77°06.71'N	78°44.76'N	09:52:37	28.8	194.9	226.4	02m19.2s
047°15.0'E	80°24.30'N	77°04.59'N	78°42.85'N	09:52:41	28.8	195.1	226.4	02m19.3s
047°22.5'E	80°22.61'N	77°02.46'N	78°40.93'N	09:52:45	28.8	195.2	226.4	02m19.3s
047°30.0'E	80°20.90'N	77°00.32'N	78°39.00'N	09:52:49	28.8	195.4	226.5	02m19.4s
047°37.5'E	80°19.19'N	76°58.16'N	78°37.06'N	09:52:54	28.9	195.5	226.5	02m19.4s
047°45.0'E	80°17.47'N	76°55.99'N	78°35.10'N	09:52:58	28.9	195.7	226.5	02m19.5s
047°52.5'E	80°15.73'N	76°53.80'N	78°33.13'N	09:53:02	28.9	195.9	226.5	02m19.5s
048°00.0'E	80°13.99'N	76°51.60'N	78°31.15'N	09:53:06	28.9	196.0	226.5	02m19.5s
048°07.5'E	80°12.23'N	76°49.39'N	78°29.16'N	09:53:11	29.0	196.2	226.6	02m19.6s
048°15.0'E	80°10.46'N	76°47.17'N	78°27.15'N	09:53:15	29.0	196.3	226.6	02m19.6s
048°22.5'E	80°08.68'N	76°44.93'N	78°25.13'N	09:53:19	29.0	196.5	226.6	02m19.7s
048°30.0'E	80°06.89'N	76°42.68'N	78°23.10'N	09:53:23	29.0	196.7	226.6	02m19.7s
048°37.5'E	80°05.09'N	76°40.42'N	78°21.06'N	09:53:28	29.1	196.8	226.6	02m19.8s
048°45.0'E	80°03.27'N	76°38.14'N	78°19.00'N	09:53:32	29.1	197.0	226.7	02m19.8s
048°52.5'E	80°01.44'N	76°35.85'N	78°16.93'N	09:53:37	29.1	197.1	226.7	02m19.9s
049°00.0'E	79°59.60'N	76°33.54'N	78°14.85'N	09:53:41	29.1	197.3	226.7	02m19.9s
049°07.5'E	79°57.75'N	76°31.22'N	78°12.76'N	09:53:46	29.2	197.5	226.7	02m19.9s
049°15.0'E	79°55.89'N	76°28.89'N	78°10.65'N	09:53:50	29.2	197.6	226.8	02m20.0s
049°22.5'E	79°54.02'N	76°26.54'N	78°08.53'N	09:53:55	29.2	197.8	226.8	02m20.0s
049°30.0'E	79°52.13'N	76°24.18'N	78°06.40'N	09:53:59	29.2	198.0	226.8	02m20.1s
049°37.5'E	79°50.23'N	76°21.80'N	78°04.25'N	09:54:04	29.3	198.1	226.8	02m20.1s
049°45.0'E	79°48.32'N	76°19.41'N	78°02.09'N	09:54:08	29.3	198.3	226.8	02m20.2s
049°52.5'E	79°46.39'N	76°17.01'N	77°59.91'N	09:54:13	29.3	198.4	226.9	02m20.2s
050°00.0'E	79°44.45'N	76°14.59'N	77°57.72'N	09:54:18	29.3	198.6	226.9	02m20.3s
050°07.5'E	79°42.50'N	76°12.15'N	77°55.52'N	09:54:22	29.4	198.8	226.9	02m20.3s
050°15.0'E	79°40.54'N	76°09.71'N	77°53.30'N	09:54:27	29.4	198.9	226.9	02m20.3s
050°22.5'E	79°38.57'N	76°07.24'N	77°51.07'N	09:54:32	29.4	199.1	227.0	02m20.4s
050°30.0'E	79°36.58'N	76°04.76'N	77°48.83'N	09:54:37	29.4	199.3	227.0	02m20.4s
050°37.5'E	79°34.57'N	76°02.27'N	77°46.57'N	09:54:41	29.5	199.4	227.0	02m20.5s
050°45.0'E	79°32.56'N	75°59.76'N	77°44.30'N	09:54:46	29.5	199.6	227.0	02m20.5s
050°52.5'E	79°30.53'N	75°57.23'N	77°42.01'N	09:54:51	29.5	199.8	227.1	02m20.6s
051°00.0'E	79°28.49'N	75°54.69'N	77°39.71'N	09:54:56	29.5	199.9	227.1	02m20.6s
051°07.5'E	79°26.43'N	75°52.14'N	77°37.39'N	09:55:01	29.6	200.1	227.1	02m20.7s
051°15.0'E	79°24.36'N	75°49.56'N	77°35.06'N	09:55:06	29.6	200.3	227.1	02m20.7s
051°22.5'E	79°22.28'N	75°46.98'N	77°32.71'N	09:55:11	29.6	200.4	227.2	02m20.8s
051°30.0'E	79°20.18'N	75°44.37'N	77°30.35'N	09:55:16	29.6	200.6	227.2	02m20.8s
051°37.5'E	79°18.07'N	75°41.75'N	77°27.97'N	09:55:21	29.7	200.8	227.2	02m20.8s
051°45.0'E	79°15.94'N	75°39.12'N	77°25.58'N	09:55:26	29.7	200.9	227.2	02m20.9s
051°52.5'E	79°13.80'N	75°36.47'N	77°23.17'N	09:55:31	29.7	201.1	227.3	02m20.9s
052°00.0'E	79°11.65'N	75°33.80'N	77°20.75'N	09:55:36	29.7	201.3	227.3	02m21.0s
052°07.5'E	79°09.48'N	75°31.11'N	77°18.31'N	09:55:42	29.8	201.4	227.3	02m21.0s
052°15.0'E	79°07.29'N	75°28.41'N	77°15.86'N	09:55:47	29.8	201.6	227.3	02m21.1s
052°22.5'E	79°05.10'N	75°25.70'N	77°13.39'N	09:55:52	29.8	201.8	227.4	02m21.1s



Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
052°30.0'E	79°02.88'N	75°22.96'N	77°10.90'N	09:55:57	29.8	201.9	227.4	02m21.2s
052°37.5'E	79°00.65'N	75°20.21'N	77°08.40'N	09:56:03	29.9	202.1	227.4	02m21.2s
052°45.0'E	78°58.41'N	75°17.44'N	77°05.88'N	09:56:08	29.9	202.3	227.4	02m21.3s
052°52.5'E	78°56.15'N	75°14.66'N	77°03.35'N	09:56:13	29.9	202.5	227.5	02m21.3s
053°00.0'E	78°53.88'N	75°11.85'N	77°00.80'N	09:56:19	30.0	202.6	227.5	02m21.4s
053°07.5'E	78°51.59'N	75°09.03'N	76°58.23'N	09:56:24	30.0	202.8	227.5	02m21.4s
053°15.0'E	78°49.28'N	75°06.19'N	76°55.65'N	09:56:30	30.0	203.0	227.6	02m21.5s
053°22.5'E	78°46.96'N	75°03.34'N	76°53.05'N	09:56:35	30.0	203.1	227.6	02m21.5s
053°30.0'E	78°44.63'N	75°00.46'N	76°50.43'N	09:56:41	30.1	203.3	227.6	02m21.6s
053°37.5'E	78°42.27'N	74°57.57'N	76°47.79'N	09:56:47	30.1	203.5	227.6	02m21.6s
053°45.0'E	78°39.90'N	74°54.66'N	76°45.14'N	09:56:52	30.1	203.7	227.7	02m21.7s
053°52.5'E	78°37.52'N	74°51.74'N	76°42.47'N	09:56:58	30.1	203.8	227.7	02m21.7s
054°00.0'E	78°35.12'N	74°48.79'N	76°39.79'N	09:57:04	30.2	204.0	227.7	02m21.7s
054°07.5'E	78°32.70'N	74°45.83'N	76°37.08'N	09:57:09	30.2	204.2	227.8	02m21.8s
054°15.0'E	78°30.27'N	74°42.84'N	76°34.36'N	09:57:15	30.2	204.4	227.8	02m21.8s
054°22.5'E	78°27.81'N	74°39.84'N	76°31.62'N	09:57:21	30.3	204.5	227.8	02m21.9s
054°30.0'E	78°25.35'N	74°36.82'N	76°28.86'N	09:57:27	30.3	204.7	227.9	02m21.9s
054°37.5'E	78°22.86'N	74°33.78'N	76°26.09'N	09:57:33	30.3	204.9	227.9	02m22.0s
054°45.0'E	78°20.36'N	74°30.73'N	76°23.29'N	09:57:39	30.3	205.1	227.9	02m22.0s
054°52.5'E	78°17.84'N	74°27.65'N	76°20.48'N	09:57:45	30.4	205.2	227.9	02m22.1s
055°00.0'E	78°15.30'N	74°24.55'N	76°17.65'N	09:57:51	30.4	205.4	228.0	02m22.1s
055°07.5'E	78°12.75'N	74°21.44'N	76°14.80'N	09:57:57	30.4	205.6	228.0	02m22.2s
055°15.0'E	78°10.17'N	74°18.30'N	76°11.93'N	09:58:03	30.4	205.8	228.0	02m22.2s
055°22.5'E	78°07.58'N	74°15.15'N	76°09.05'N	09:58:09	30.5	205.9	228.1	02m22.3s
055°30.0'E	78°04.97'N	74°11.97'N	76°06.14'N	09:58:15	30.5	206.1	228.1	02m22.3s
055°37.5'E	78°02.35'N	74°08.78'N	76°03.22'N	09:58:21	30.5	206.3	228.1	02m22.4s
055°45.0'E	77°59.70'N	74°05.56'N	76°00.27'N	09:58:28	30.6	206.5	228.2	02m22.4s
055°52.5'E	77°57.04'N	74°02.33'N	75°57.31'N	09:58:34	30.6	206.7	228.2	02m22.5s
056°00.0'E	77°54.36'N	73°59.07'N	75°54.33'N	09:58:40	30.6	206.8	228.2	02m22.5s
056°07.5'E	77°51.66'N	73°55.79'N	75°51.32'N	09:58:47	30.6	207.0	228.3	02m22.6s
056°15.0'E	77°48.94'N	73°52.50'N	75°48.30'N	09:58:53	30.7	207.2	228.3	02m22.6s
056°22.5'E	77°46.20'N	73°49.18'N	75°45.26'N	09:59:00	30.7	207.4	228.3	02m22.7s
056°30.0'E	77°43.44'N	73°45.84'N	75°42.19'N	09:59:06	30.7	207.6	228.4	02m22.7s
056°37.5'E	77°40.66'N	73°42.48'N	75°39.11'N	09:59:13	30.7	207.7	228.4	02m22.8s
056°45.0'E	77°37.86'N	73°39.10'N	75°36.00'N	09:59:19	30.8	207.9	228.4	02m22.8s
056°52.5'E	77°35.05'N	73°35.70'N	75°32.88'N	09:59:26	30.8	208.1	228.5	02m22.9s
057°00.0'E	77°32.21'N	73°32.28'N	75°29.73'N	09:59:33	30.8	208.3	228.5	02m22.9s
057°07.5'E	77°29.36'N	73°28.83'N	75°26.57'N	09:59:39	30.9	208.5	228.6	02m23.0s
057°15.0'E	77°26.48'N	73°25.36'N	75°23.38'N	09:59:46	30.9	208.7	228.6	02m23.0s
057°22.5'E	77°23.58'N	73°21.88'N	75°20.17'N	09:59:53	30.9	208.8	228.6	02m23.1s
057°30.0'E	77°20.66'N	73°18.37'N	75°16.94'N	10:00:00	30.9	209.0	228.7	02m23.1s
057°37.5'E	77°17.72'N	73°14.83'N	75°13.69'N	10:00:07	31.0	209.2	228.7	02m23.2s
057°45.0'E	77°14.77'N	73°11.28'N	75°10.42'N	10:00:14	31.0	209.4	228.7	02m23.2s
057°52.5'E	77°11.79'N	73°07.70'N	75°07.12'N	10:00:21	31.0	209.6	228.8	02m23.3s
058°00.0'E	77°08.78'N	73°04.10'N	75°03.81'N	10:00:28	31.1	209.8	228.8	02m23.3s
058°07.5'E	77°05.76'N	73°00.48'N	75°00.47'N	10:00:35	31.1	210.0	228.9	02m23.4s
058°15.0'E	77°02.72'N	72°56.83'N	74°57.10'N	10:00:42	31.1	210.1	228.9	02m23.4s
058°22.5'E	76°59.65'N	72°53.16'N	74°53.72'N	10:00:50	31.1	210.3	228.9	02m23.5s
058°30.0'E	76°56.56'N	72°49.47'N	74°50.31'N	10:00:57	31.2	210.5	229.0	02m23.5s
058°37.5'E	76°53.45'N	72°45.76'N	74°46.88'N	10:01:04	31.2	210.7	229.0	02m23.6s
058°45.0'E	76°50.32'N	72°42.02'N	74°43.43'N	10:01:12	31.2	210.9	229.1	02m23.6s
058°52.5'E	76°47.17'N	72°38.25'N	74°39.95'N	10:01:19	31.3	211.1	229.1	02m23.7s

Table 7b (CONTINUED)

MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
059°00.0'E	76°43.99'N	72°34.47'N	74°36.46'N	10:01:26	31.3	211.3	229.1	02m23.7s
059°07.5'E	76°40.79'N	72°30.66'N	74°32.93'N	10:01:34	31.3	211.5	229.2	02m23.8s
059°15.0'E	76°37.57'N	72°26.82'N	74°29.39'N	10:01:42	31.3	211.7	229.2	02m23.8s
059°22.5'E	76°34.32'N	72°22.97'N	74°25.82'N	10:01:49	31.4	211.9	229.3	02m23.9s
059°30.0'E	76°31.05'N	72°19.08'N	74°22.22'N	10:01:57	31.4	212.0	229.3	02m23.9s
059°37.5'E	76°27.76'N	72°15.18'N	74°18.61'N	10:02:05	31.4	212.2	229.4	02m24.0s
059°45.0'E	76°24.45'N	72°11.24'N	74°14.96'N	10:02:12	31.5	212.4	229.4	02m24.0s
059°52.5'E	76°21.11'N	72°07.29'N	74°11.30'N	10:02:20	31.5	212.6	229.4	02m24.1s
060°00.0'E	76°17.74'N	72°03.31'N	74°07.61'N	10:02:28	31.5	212.8	229.5	02m24.1s
060°07.5'E	76°14.35'N	71°59.30'N	74°03.89'N	10:02:36	31.5	213.0	229.5	02m24.2s
060°15.0'E	76°10.94'N	71°55.27'N	74°00.15'N	10:02:44	31.6	213.2	229.6	02m24.2s
060°22.5'E	76°07.51'N	71°51.21'N	73°56.38'N	10:02:52	31.6	213.4	229.6	02m24.3s
060°30.0'E	76°04.04'N	71°47.13'N	73°52.59'N	10:03:00	31.6	213.6	229.7	02m24.3s
060°37.5'E	76°00.56'N	71°43.02'N	73°48.77'N	10:03:09	31.7	213.8	229.7	02m24.4s
060°45.0'E	75°57.05'N	71°38.88'N	73°44.93'N	10:03:17	31.7	214.0	229.8	02m24.4s
060°52.5'E	75°53.51'N	71°34.72'N	73°41.06'N	10:03:25	31.7	214.2	229.8	02m24.5s
061°00.0'E	75°49.95'N	71°30.54'N	73°37.17'N	10:03:34	31.7	214.4	229.9	02m24.5s
061°07.5'E	75°46.36'N	71°26.33'N	73°33.25'N	10:03:42	31.8	214.6	229.9	02m24.6s
061°15.0'E	75°42.74'N	71°22.09'N	73°29.30'N	10:03:51	31.8	214.8	230.0	02m24.6s
061°22.5'E	75°39.10'N	71°17.82'N	73°25.33'N	10:03:59	31.8	215.0	230.0	02m24.7s
061°30.0'E	75°35.44'N	71°13.53'N	73°21.33'N	10:04:08	31.9	215.2	230.1	02m24.7s
061°37.5'E	75°31.74'N	71°09.21'N	73°17.31'N	10:04:16	31.9	215.4	230.1	02m24.7s
061°45.0'E	75°28.03'N	71°04.86'N	73°13.25'N	10:04:25	31.9	215.6	230.2	02m24.8s
061°52.5'E	75°24.28'N	71°00.49'N	73°09.17'N	10:04:34	31.9	215.8	230.2	02m24.8s
062°00.0'E	75°20.51'N	70°56.09'N	73°05.06'N	10:04:43	32.0	216.0	230.3	02m24.9s
062°07.5'E	75°16.71'N	70°51.66'N	73°00.93'N	10:04:52	32.0	216.2	230.3	02m24.9s
062°15.0'E	75°12.88'N	70°47.21'N	72°56.77'N	10:05:01	32.0	216.4	230.4	02m25.0s
062°22.5'E	75°09.02'N	70°42.73'N	72°52.58'N	10:05:10	32.0	216.6	230.4	02m25.0s
062°30.0'E	75°05.14'N	70°38.22'N	72°48.36'N	10:05:19	32.1	216.8	230.5	02m25.1s
062°37.5'E	75°01.23'N	70°33.68'N	72°44.11'N	10:05:28	32.1	217.0	230.5	02m25.1s
062°45.0'E	74°57.29'N	70°29.11'N	72°39.84'N	10:05:37	32.1	217.2	230.6	02m25.2s
062°52.5'E	74°53.32'N	70°24.52'N	72°35.53'N	10:05:47	32.2	217.5	230.7	02m25.2s
063°00.0'E	74°49.32'N	70°19.89'N	72°31.20'N	10:05:56	32.2	217.7	230.7	02m25.3s
063°07.5'E	74°45.30'N	70°15.24'N	72°26.84'N	10:06:05	32.2	217.9	230.8	02m25.3s
063°15.0'E	74°41.24'N	70°10.56'N	72°22.45'N	10:06:15	32.2	218.1	230.8	02m25.4s
063°22.5'E	74°37.16'N	70°05.85'N	72°18.03'N	10:06:25	32.3	218.3	230.9	02m25.4s
063°30.0'E	74°33.04'N	70°01.12'N	72°13.58'N	10:06:34	32.3	218.5	230.9	02m25.4s
063°37.5'E	74°28.90'N	69°56.35'N	72°09.10'N	10:06:44	32.3	218.7	231.0	02m25.5s
063°45.0'E	74°24.73'N	69°51.55'N	72°04.60'N	10:06:54	32.3	218.9	231.1	02m25.5s
063°52.5'E	74°20.52'N	69°46.73'N	72°00.06'N	10:07:04	32.4	219.1	231.1	02m25.6s
064°00.0'E	74°16.29'N	69°41.87'N	71°55.49'N	10:07:13	32.4	219.4	231.2	02m25.6s
064°07.5'E	74°12.03'N	69°36.99'N	71°50.90'N	10:07:23	32.4	219.6	231.2	02m25.7s
064°15.0'E	74°07.73'N	69°32.08'N	71°46.27'N	10:07:33	32.5	219.8	231.3	02m25.7s
064°22.5'E	74°03.41'N	69°27.14'N	71°41.61'N	10:07:44	32.5	220.0	231.4	02m25.7s
064°30.0'E	73°59.05'N	69°22.16'N	71°36.92'N	10:07:54	32.5	220.2	231.4	02m25.8s
064°37.5'E	73°54.66'N	69°17.16'N	71°32.20'N	10:08:04	32.5	220.4	231.5	02m25.8s
064°45.0'E	73°50.24'N	69°12.13'N	71°27.45'N	10:08:14	32.6	220.7	231.6	02m25.9s
064°52.5'E	73°45.79'N	69°07.07'N	71°22.67'N	10:08:25	32.6	220.9	231.6	02m25.9s
065°00.0'E	73°41.31'N	69°01.97'N	71°17.86'N	10:08:35	32.6	221.1	231.7	02m26.0s
065°07.5'E	73°36.79'N	68°56.85'N	71°13.02'N	10:08:46	32.6	221.3	231.8	02m26.0s
065°15.0'E	73°32.25'N	68°51.70'N	71°08.14'N	10:08:57	32.7	221.5	231.8	02m26.0s
065°22.5'E	73°27.67'N	68°46.51'N	71°03.23'N	10:09:07	32.7	221.8	231.9	02m26.1s

Table 7b (CONTINUED)

MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
065°30.0'E	73°23.06'N	68°41.30'N	70°58.30'N	10:09:18	32.7	222.0	232.0	02m26.1s
065°37.5'E	73°18.41'N	68°36.05'N	70°53.33'N	10:09:29	32.7	222.2	232.0	02m26.1s
065°45.0'E	73°13.73'N	68°30.78'N	70°48.32'N	10:09:40	32.8	222.4	232.1	02m26.2s
065°52.5'E	73°09.02'N	68°25.47'N	70°43.29'N	10:09:51	32.8	222.6	232.2	02m26.2s
066°00.0'E	73°04.28'N	68°20.13'N	70°38.22'N	10:10:02	32.8	222.9	232.3	02m26.3s
066°07.5'E	72°59.50'N	68°14.76'N	70°33.12'N	10:10:13	32.8	223.1	232.3	02m26.3s
066°15.0'E	72°54.69'N	68°09.36'N	70°27.99'N	10:10:24	32.8	223.3	232.4	02m26.3s
066°22.5'E	72°49.84'N	68°03.93'N	70°22.83'N	10:10:36	32.9	223.6	232.5	02m26.4s
066°30.0'E	72°44.96'N	67°58.47'N	70°17.63'N	10:10:47	32.9	223.8	232.5	02m26.4s
066°37.5'E	72°40.05'N	67°52.98'N	70°12.40'N	10:10:59	32.9	224.0	232.6	02m26.4s
066°45.0'E	72°35.10'N	67°47.45'N	70°07.14'N	10:11:10	32.9	224.2	232.7	02m26.5s
066°52.5'E	72°30.12'N	67°41.90'N	70°01.84'N	10:11:22	33.0	224.5	232.8	02m26.5s
067°00.0'E	72°25.10'N	67°36.31'N	69°56.51'N	10:11:34	33.0	224.7	232.9	02m26.5s
067°07.5'E	72°20.05'N	67°30.69'N	69°51.15'N	10:11:45	33.0	224.9	232.9	02m26.6s
067°15.0'E	72°14.96'N	67°25.04'N	69°45.75'N	10:11:57	33.0	225.2	233.0	02m26.6s
067°22.5'E	72°09.84'N	67°19.36'N	69°40.32'N	10:12:09	33.0	225.4	233.1	02m26.6s
067°30.0'E	72°04.68'N	67°13.65'N	69°34.86'N	10:12:21	33.1	225.6	233.2	02m26.7s
067°37.5'E	71°59.48'N	67°07.91'N	69°29.36'N	10:12:34	33.1	225.9	233.3	02m26.7s
067°45.0'E	71°54.25'N	67°02.13'N	69°23.83'N	10:12:46	33.1	226.1	233.3	02m26.7s
067°52.5'E	71°48.99'N	66°56.32'N	69°18.26'N	10:12:58	33.1	226.3	233.4	02m26.7s
068°00.0'E	71°43.68'N	66°50.48'N	69°12.66'N	10:13:10	33.1	226.6	233.5	02m26.8s
068°07.5'E	71°38.34'N	66°44.61'N	69°07.03'N	10:13:23	33.2	226.8	233.6	02m26.8s
068°15.0'E	71°32.97'N	66°38.71'N	69°01.36'N	10:13:35	33.2	227.1	233.7	02m26.8s
068°22.5'E	71°27.56'N	66°32.78'N	68°55.66'N	10:13:48	33.2	227.3	233.8	02m26.9s
068°30.0'E	71°22.11'N	66°26.81'N	68°49.92'N	10:14:01	33.2	227.5	233.8	02m26.9s
068°37.5'E	71°16.62'N	66°20.81'N	68°44.15'N	10:14:13	33.2	227.8	233.9	02m26.9s
068°45.0'E	71°11.10'N	66°14.79'N	68°38.35'N	10:14:26	33.2	228.0	234.0	02m26.9s
068°52.5'E	71°05.54'N	66°08.73'N	68°32.51'N	10:14:39	33.3	228.3	234.1	02m26.9s
069°00.0'E	70°59.94'N	66°02.63'N	68°26.64'N	10:14:52	33.3	228.5	234.2	02m27.0s
069°07.5'E	70°54.31'N	65°56.51'N	68°20.73'N	10:15:05	33.3	228.8	234.3	02m27.0s
069°15.0'E	70°48.64'N	65°50.36'N	68°14.79'N	10:15:19	33.3	229.0	234.4	02m27.0s
069°22.5'E	70°42.93'N	65°44.17'N	68°08.81'N	10:15:32	33.3	229.2	234.5	02m27.0s
069°30.0'E	70°37.18'N	65°37.95'N	68°02.80'N	10:15:45	33.3	229.5	234.6	02m27.0s
069°37.5'E	70°31.40'N	65°31.71'N	67°56.75'N	10:15:59	33.3	229.7	234.7	02m27.1s
069°45.0'E	70°25.58'N	65°25.43'N	67°50.67'N	10:16:12	33.4	230.0	234.8	02m27.1s
069°52.5'E	70°19.72'N	65°19.12'N	67°44.56'N	10:16:26	33.4	230.2	234.9	02m27.1s
070°00.0'E	70°13.82'N	65°12.78'N	67°38.41'N	10:16:40	33.4	230.5	235.0	02m27.1s
070°07.5'E	70°07.88'N	65°06.41'N	67°32.22'N	10:16:53	33.4	230.7	235.1	02m27.1s
070°15.0'E	70°01.91'N	65°00.00'N	67°26.00'N	10:17:07	33.4	231.0	235.2	02m27.1s
070°22.5'E	69°55.90'N	64°53.57'N	67°19.75'N	10:17:21	33.4	231.2	235.3	02m27.1s
070°30.0'E	69°49.85'N	64°47.11'N	67°13.46'N	10:17:35	33.4	231.5	235.4	02m27.1s
070°37.5'E	69°43.76'N	64°40.61'N	67°07.14'N	10:17:49	33.4	231.7	235.5	02m27.1s
070°45.0'E	69°37.63'N	64°34.09'N	67°00.78'N	10:18:04	33.4	232.0	235.6	02m27.1s
070°52.5'E	69°31.47'N	64°27.54'N	66°54.39'N	10:18:18	33.5	232.2	235.7	02m27.2s
071°00.0'E	69°25.26'N	64°20.95'N	66°47.97'N	10:18:32	33.5	232.5	235.8	02m27.2s
071°07.5'E	69°19.02'N	64°14.34'N	66°41.51'N	10:18:47	33.5	232.8	235.9	02m27.2s
071°15.0'E	69°12.74'N	64°07.69'N	66°35.02'N	10:19:01	33.5	233.0	236.0	02m27.2s
071°22.5'E	69°06.42'N	64°01.02'N	66°28.49'N	10:19:16	33.5	233.3	236.1	02m27.2s
071°30.0'E	69°00.06'N	63°54.32'N	66°21.93'N	10:19:31	33.5	233.5	236.2	02m27.2s
071°37.5'E	68°53.67'N	63°47.59'N	66°15.34'N	10:19:45	33.5	233.8	236.3	02m27.2s
071°45.0'E	68°47.23'N	63°40.83'N	66°08.71'N	10:20:00	33.5	234.1	236.4	02m27.2s
071°52.5'E	68°40.76'N	63°34.04'N	66°02.05'N	10:20:15	33.5	234.3	236.5	02m27.1s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
072°00.0'E	68°34.25'N	63°27.22'N	65°55.35'N	10:20:30	33.5	234.6	236.6	02m27.1s
072°07.5'E	68°27.70'N	63°20.38'N	65°48.62'N	10:20:45	33.5	234.8	236.8	02m27.1s
072°15.0'E	68°21.11'N	63°13.51'N	65°41.86'N	10:21:01	33.5	235.1	236.9	02m27.1s
072°22.5'E	68°14.49'N	63°06.61'N	65°35.07'N	10:21:16	33.5	235.4	237.0	02m27.1s
072°30.0'E	68°07.83'N	62°59.68'N	65°28.24'N	10:21:31	33.5	235.6	237.1	02m27.1s
072°37.5'E	68°01.12'N	62°52.72'N	65°21.38'N	10:21:47	33.5	235.9	237.2	02m27.1s
072°45.0'E	67°54.39'N	62°45.74'N	65°14.49'N	10:22:02	33.5	236.2	237.3	02m27.1s
072°52.5'E	67°47.61'N	62°38.73'N	65°07.57'N	10:22:18	33.5	236.4	237.4	02m27.1s
073°00.0'E	67°40.79'N	62°31.70'N	65°00.61'N	10:22:34	33.5	236.7	237.6	02m27.0s
073°07.5'E	67°33.94'N	62°24.64'N	64°53.63'N	10:22:49	33.5	236.9	237.7	02m27.0s
073°15.0'E	67°27.05'N	62°17.55'N	64°46.61'N	10:23:05	33.5	237.2	237.8	02m27.0s
073°22.5'E	67°20.13'N	62°10.44'N	64°39.56'N	10:23:21	33.5	237.5	237.9	02m27.0s
073°30.0'E	67°13.16'N	62°03.30'N	64°32.48'N	10:23:37	33.5	237.8	238.1	02m27.0s
073°37.5'E	67°06.16'N	61°56.14'N	64°25.37'N	10:23:53	33.5	238.0	238.2	02m26.9s
073°45.0'E	66°59.12'N	61°48.95'N	64°18.23'N	10:24:09	33.5	238.3	238.3	02m26.9s
073°52.5'E	66°52.05'N	61°41.74'N	64°11.05'N	10:24:25	33.5	238.6	238.4	02m26.9s
074°00.0'E	66°44.94'N	61°34.51'N	64°03.85'N	10:24:42	33.4	238.8	238.6	02m26.8s
074°07.5'E	66°37.79'N	61°27.25'N	63°56.62'N	10:24:58	33.4	239.1	238.7	02m26.8s
074°15.0'E	66°30.61'N	61°19.97'N	63°49.36'N	10:25:14	33.4	239.4	238.8	02m26.8s
074°22.5'E	66°23.39'N	61°12.67'N	63°42.07'N	10:25:31	33.4	239.6	238.9	02m26.7s
074°30.0'E	66°16.14'N	61°05.34'N	63°34.75'N	10:25:47	33.4	239.9	239.1	02m26.7s
074°37.5'E	66°08.85'N	60°57.99'N	63°27.41'N	10:26:04	33.4	240.2	239.2	02m26.7s
074°45.0'E	66°01.53'N	60°50.63'N	63°20.03'N	10:26:21	33.4	240.5	239.3	02m26.6s
074°52.5'E	65°54.17'N	60°43.24'N	63°12.63'N	10:26:38	33.4	240.7	239.5	02m26.6s
075°00.0'E	65°46.78'N	60°35.83'N	63°05.20'N	10:26:54	33.3	241.0	239.6	02m26.5s
075°07.5'E	65°39.35'N	60°28.39'N	62°57.75'N	10:27:11	33.3	241.3	239.7	02m26.5s
075°15.0'E	65°31.89'N	60°20.95'N	62°50.27'N	10:27:28	33.3	241.6	239.9	02m26.4s
075°22.5'E	65°24.40'N	60°13.48'N	62°42.76'N	10:27:45	33.3	241.8	240.0	02m26.4s
075°30.0'E	65°16.87'N	60°05.99'N	62°35.23'N	10:28:02	33.3	242.1	240.1	02m26.3s
075°37.5'E	65°09.31'N	59°58.48'N	62°27.67'N	10:28:19	33.2	242.4	240.3	02m26.3s
075°45.0'E	65°01.72'N	59°50.96'N	62°20.09'N	10:28:37	33.2	242.7	240.4	02m26.2s
075°52.5'E	64°54.10'N	59°43.41'N	62°12.48'N	10:28:54	33.2	242.9	240.5	02m26.2s
076°00.0'E	64°46.44'N	59°35.86'N	62°04.85'N	10:29:11	33.2	243.2	240.7	02m26.1s
076°07.5'E	64°38.76'N	59°28.28'N	61°57.20'N	10:29:29	33.1	243.5	240.8	02m26.0s
076°15.0'E	64°31.04'N	59°20.69'N	61°49.52'N	10:29:46	33.1	243.8	241.0	02m26.0s
076°22.5'E	64°23.30'N	59°13.08'N	61°41.82'N	10:30:03	33.1	244.0	241.1	02m25.9s
076°30.0'E	64°15.52'N	59°05.46'N	61°34.10'N	10:30:21	33.1	244.3	241.2	02m25.8s
076°37.5'E	64°07.72'N	58°57.82'N	61°26.36'N	10:30:39	33.0	244.6	241.4	02m25.8s
076°45.0'E	63°59.88'N	58°50.17'N	61°18.59'N	10:30:56	33.0	244.9	241.5	02m25.7s
076°52.5'E	63°52.02'N	58°42.51'N	61°10.81'N	10:31:14	33.0	245.1	241.7	02m25.6s
077°00.0'E	63°44.13'N	58°34.83'N	61°03.01'N	10:31:32	32.9	245.4	241.8	02m25.6s
077°07.5'E	63°36.21'N	58°27.15'N	60°55.18'N	10:31:49	32.9	245.7	242.0	02m25.5s
077°15.0'E	63°28.27'N	58°19.44'N	60°47.34'N	10:32:07	32.9	246.0	242.1	02m25.4s
077°22.5'E	63°20.30'N	58°11.73'N	60°39.48'N	10:32:25	32.8	246.2	242.2	02m25.3s
077°30.0'E	63°12.30'N	58°04.01'N	60°31.60'N	10:32:43	32.8	246.5	242.4	02m25.2s
077°37.5'E	63°04.28'N	57°56.28'N	60°23.71'N	10:33:01	32.8	246.8	242.5	02m25.1s
077°45.0'E	62°56.23'N	57°48.54'N	60°15.80'N	10:33:19	32.7	247.1	242.7	02m25.1s
077°52.5'E	62°48.16'N	57°40.78'N	60°07.87'N	10:33:37	32.7	247.4	242.8	02m25.0s
078°00.0'E	62°40.07'N	57°33.02'N	59°59.93'N	10:33:55	32.6	247.6	243.0	02m24.9s
078°07.5'E	62°31.95'N	57°25.26'N	59°51.97'N	10:34:13	32.6	247.9	243.1	02m24.8s
078°15.0'E	62°23.81'N	57°17.48'N	59°44.00'N	10:34:31	32.5	248.2	243.3	02m24.7s
078°22.5'E	62°15.65'N	57°09.70'N	59°36.02'N	10:34:49	32.5	248.5	243.4	02m24.6s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
078°30.0'E	62°07.46'N	57°01.91'N	59°28.02'N	10:35:07	32.5	248.7	243.6	02m24.5s
078°37.5'E	61°59.26'N	56°54.11'N	59°20.01'N	10:35:25	32.4	249.0	243.7	02m24.4s
078°45.0'E	61°51.04'N	56°46.31'N	59°11.99'N	10:35:43	32.4	249.3	243.8	02m24.3s
078°52.5'E	61°42.80'N	56°38.51'N	59°03.95'N	10:36:01	32.3	249.6	244.0	02m24.2s
079°00.0'E	61°34.54'N	56°30.70'N	58°55.91'N	10:36:20	32.3	249.8	244.1	02m24.1s
079°07.5'E	61°26.26'N	56°22.89'N	58°47.86'N	10:36:38	32.2	250.1	244.3	02m24.0s
079°15.0'E	61°17.96'N	56°15.08'N	58°39.79'N	10:36:56	32.2	250.4	244.4	02m23.8s
079°22.5'E	61°09.65'N	56°07.26'N	58°31.72'N	10:37:14	32.1	250.6	244.6	02m23.7s
079°30.0'E	61°01.32'N	55°59.44'N	58°23.64'N	10:37:33	32.0	250.9	244.7	02m23.6s
079°37.5'E	60°52.98'N	55°51.62'N	58°15.56'N	10:37:51	32.0	251.2	244.9	02m23.5s
079°45.0'E	60°44.62'N	55°43.80'N	58°07.46'N	10:38:09	31.9	251.5	245.0	02m23.4s
079°52.5'E	60°36.25'N	55°35.98'N	57°59.36'N	10:38:28	31.9	251.7	245.2	02m23.2s
080°00.0'E	60°27.87'N	55°28.16'N	57°51.26'N	10:38:46	31.8	252.0	245.3	02m23.1s
080°07.5'E	60°19.47'N	55°20.34'N	57°43.15'N	10:39:04	31.8	252.3	245.4	02m23.0s
080°15.0'E	60°11.06'N	55°12.52'N	57°35.03'N	10:39:22	31.7	252.5	245.6	02m22.9s
080°22.5'E	60°02.64'N	55°04.71'N	57°26.91'N	10:39:41	31.6	252.8	245.7	02m22.7s
080°30.0'E	59°54.21'N	54°56.89'N	57°18.79'N	10:39:59	31.6	253.1	245.9	02m22.6s
080°37.5'E	59°45.77'N	54°49.08'N	57°10.67'N	10:40:17	31.5	253.4	246.0	02m22.5s
080°45.0'E	59°37.32'N	54°41.28'N	57°02.54'N	10:40:36	31.4	253.6	246.2	02m22.3s
080°52.5'E	59°28.86'N	54°33.48'N	56°54.42'N	10:40:54	31.4	253.9	246.3	02m22.2s
081°00.0'E	59°20.40'N	54°25.68'N	56°46.29'N	10:41:12	31.3	254.2	246.4	02m22.0s
081°07.5'E	59°11.93'N	54°17.89'N	56°38.17'N	10:41:30	31.2	254.4	246.6	02m21.9s
081°15.0'E	59°03.45'N	54°10.11'N	56°30.04'N	10:41:49	31.2	254.7	246.7	02m21.7s
081°22.5'E	58°54.97'N	54°02.33'N	56°21.92'N	10:42:07	31.1	254.9	246.9	02m21.6s
081°30.0'E	58°46.49'N	53°54.55'N	56°13.79'N	10:42:25	31.0	255.2	247.0	02m21.4s
081°37.5'E	58°38.00'N	53°46.79'N	56°05.68'N	10:42:43	30.9	255.5	247.1	02m21.3s
081°45.0'E	58°29.50'N	53°39.04'N	55°57.56'N	10:43:01	30.9	255.7	247.3	02m21.1s
081°52.5'E	58°21.01'N	53°31.29'N	55°49.45'N	10:43:19	30.8	256.0	247.4	02m21.0s
082°00.0'E	58°12.51'N	53°23.55'N	55°41.34'N	10:43:38	30.7	256.3	247.5	02m20.8s
082°07.5'E	58°04.02'N	53°15.82'N	55°33.24'N	10:43:56	30.6	256.5	247.7	02m20.7s
082°15.0'E	57°55.52'N	53°08.10'N	55°25.14'N	10:44:14	30.6	256.8	247.8	02m20.5s
082°22.5'E	57°47.02'N	53°00.40'N	55°17.05'N	10:44:32	30.5	257.0	247.9	02m20.3s
082°30.0'E	57°38.53'N	52°52.70'N	55°08.97'N	10:44:50	30.4	257.3	248.0	02m20.2s
082°37.5'E	57°30.03'N	52°45.01'N	55°00.90'N	10:45:08	30.3	257.5	248.2	02m20.0s
082°45.0'E	57°21.54'N	52°37.34'N	54°52.83'N	10:45:26	30.2	257.8	248.3	02m19.8s
082°52.5'E	57°13.06'N	52°29.68'N	54°44.77'N	10:45:44	30.1	258.0	248.4	02m19.7s
083°00.0'E	57°04.57'N	52°22.03'N	54°36.72'N	10:46:01	30.1	258.3	248.5	02m19.5s
083°07.5'E	56°56.10'N	52°14.39'N	54°28.68'N	10:46:19	30.0	258.6	248.7	02m19.3s
083°15.0'E	56°47.62'N	52°06.77'N	54°20.65'N	10:46:37	29.9	258.8	248.8	02m19.2s
083°22.5'E	56°39.16'N	51°59.17'N	54°12.63'N	10:46:55	29.8	259.1	248.9	02m19.0s
083°30.0'E	56°30.70'N	51°51.57'N	54°04.63'N	10:47:12	29.7	259.3	249.0	02m18.8s
083°37.5'E	56°22.25'N	51°44.00'N	53°56.63'N	10:47:30	29.6	259.5	249.1	02m18.6s
083°45.0'E	56°13.80'N	51°36.43'N	53°48.65'N	10:47:48	29.5	259.8	249.2	02m18.4s
083°52.5'E	56°05.37'N	51°28.89'N	53°40.68'N	10:48:05	29.4	260.0	249.3	02m18.3s
084°00.0'E	55°56.95'N	51°21.36'N	53°32.73'N	10:48:23	29.3	260.3	249.5	02m18.1s
084°07.5'E	55°48.53'N	51°13.85'N	53°24.79'N	10:48:40	29.2	260.5	249.6	02m17.9s
084°15.0'E	55°40.13'N	51°06.35'N	53°16.86'N	10:48:57	29.1	260.8	249.7	02m17.7s
084°22.5'E	55°31.74'N	50°58.87'N	53°08.95'N	10:49:15	29.1	261.0	249.8	02m17.5s
084°30.0'E	55°23.36'N	50°51.41'N	53°01.05'N	10:49:32	29.0	261.2	249.9	02m17.3s
084°37.5'E	55°14.99'N	50°43.96'N	52°53.17'N	10:49:49	28.9	261.5	250.0	02m17.1s
084°45.0'E	55°06.63'N	50°36.54'N	52°45.31'N	10:50:06	28.8	261.7	250.1	02m16.9s
084°52.5'E	54°58.29'N	50°29.14'N	52°37.46'N	10:50:23	28.7	262.0	250.1	02m16.7s

Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
085°00.0'E	54°49.97'N	50°21.75'N	52°29.63'N	10:50:40	28.6	262.2	250.2	02m16.5s
085°07.5'E	54°41.66'N	50°14.38'N	52°21.82'N	10:50:57	28.5	262.4	250.3	02m16.3s
085°15.0'E	54°33.36'N	50°07.03'N	52°14.02'N	10:51:14	28.4	262.7	250.4	02m16.1s
085°22.5'E	54°25.08'N	49°59.71'N	52°06.25'N	10:51:31	28.3	262.9	250.5	02m15.9s
085°30.0'E	54°16.82'N	49°52.40'N	51°58.49'N	10:51:48	28.2	263.1	250.6	02m15.7s
085°37.5'E	54°08.58'N	49°45.11'N	51°50.75'N	10:52:05	28.0	263.4	250.6	02m15.5s
085°45.0'E	54°00.35'N	49°37.85'N	51°43.04'N	10:52:21	27.9	263.6	250.7	02m15.3s
085°52.5'E	53°52.14'N	49°30.60'N	51°35.34'N	10:52:38	27.8	263.8	250.8	02m15.1s
086°00.0'E	53°43.95'N	49°23.38'N	51°27.66'N	10:52:54	27.7	264.0	250.9	02m14.9s
086°07.5'E	53°35.78'N	49°16.18'N	51°20.01'N	10:53:11	27.6	264.3	250.9	02m14.7s
086°15.0'E	53°27.63'N	49°09.00'N	51°12.38'N	10:53:27	27.5	264.5	251.0	02m14.5s
086°22.5'E	53°19.50'N	49°01.85'N	51°04.76'N	10:53:43	27.4	264.7	251.1	02m14.3s
086°30.0'E	53°11.39'N	48°54.71'N	50°57.17'N	10:53:59	27.3	264.9	251.1	02m14.1s
086°37.5'E	53°03.30'N	48°47.60'N	50°49.60'N	10:54:16	27.2	265.1	251.2	02m13.9s
086°45.0'E	52°55.23'N	48°40.51'N	50°42.06'N	10:54:32	27.1	265.4	251.2	02m13.6s
086°52.5'E	52°47.18'N	48°33.45'N	50°34.53'N	10:54:48	27.0	265.6	251.3	02m13.4s
087°00.0'E	52°39.16'N	48°26.41'N	50°27.03'N	10:55:03	26.9	265.8	251.3	02m13.2s
087°07.5'E	52°31.16'N	48°19.39'N	50°19.56'N	10:55:19	26.7	266.0	251.4	02m13.0s
087°15.0'E	52°23.18'N	48°12.40'N	50°12.10'N	10:55:35	26.6	266.2	251.4	02m12.8s
087°22.5'E	52°15.23'N	48°05.43'N	50°04.68'N	10:55:51	26.5	266.4	251.4	02m12.6s
087°30.0'E	52°07.30'N	47°58.48'N	49°57.27'N	10:56:06	26.4	266.6	251.5	02m12.3s
087°37.5'E	51°59.39'N	47°51.56'N	49°49.89'N	10:56:22	26.3	266.9	251.5	02m12.1s
087°45.0'E	51°51.51'N	47°44.66'N	49°42.54'N	10:56:37	26.2	267.1	251.5	02m11.9s
087°52.5'E	51°43.65'N	47°37.79'N	49°35.21'N	10:56:52	26.1	267.3	251.6	02m11.7s
088°00.0'E	51°35.82'N	47°30.95'N	49°27.90'N	10:57:07	25.9	267.5	251.6	02m11.4s
088°07.5'E	51°28.02'N	47°24.12'N	49°20.62'N	10:57:23	25.8	267.7	251.6	02m11.2s
088°15.0'E	51°20.24'N	47°17.33'N	49°13.37'N	10:57:38	25.7	267.9	251.6	02m11.0s
088°22.5'E	51°12.48'N	47°10.56'N	49°06.14'N	10:57:53	25.6	268.1	251.6	02m10.8s
088°30.0'E	51°04.76'N	47°03.81'N	48°58.94'N	10:58:07	25.5	268.3	251.6	02m10.6s
088°37.5'E	50°57.06'N	46°57.09'N	48°51.76'N	10:58:22	25.3	268.5	251.6	02m10.3s
088°45.0'E	50°49.38'N	46°50.40'N	48°44.61'N	10:58:37	25.2	268.7	251.6	02m10.1s
088°52.5'E	50°41.74'N	46°43.73'N	48°37.49'N	10:58:52	25.1	268.9	251.6	02m09.9s
089°00.0'E	50°34.12'N	46°37.09'N	48°30.40'N	10:59:06	25.0	269.1	251.6	02m09.6s
089°07.5'E	50°26.53'N	46°30.47'N	48°23.33'N	10:59:20	24.9	269.3	251.6	02m09.4s
089°15.0'E	50°18.97'N	46°23.88'N	48°16.29'N	10:59:35	24.7	269.5	251.6	02m09.2s
089°22.5'E	50°11.43'N	46°17.31'N	48°09.27'N	10:59:49	24.6	269.6	251.6	02m09.0s
089°30.0'E	50°03.93'N	46°10.78'N	48°02.29'N	11:00:03	24.5	269.8	251.6	02m08.7s
089°37.5'E	49°56.45'N	46°04.26'N	47°55.33'N	11:00:17	24.4	270.0	251.5	02m08.5s
089°45.0'E	49°49.00'N	45°57.78'N	47°48.39'N	11:00:31	24.3	270.2	251.5	02m08.3s
089°52.5'E	49°41.58'N	45°51.32'N	47°41.49'N	11:00:45	24.1	270.4	251.5	02m08.0s
090°00.0'E	49°34.19'N	45°44.89'N	47°34.61'N	11:00:59	24.0	270.6	251.4	02m07.8s
090°07.5'E	49°26.83'N	45°38.49'N	47°27.77'N	11:01:13	23.9	270.8	251.4	02m07.6s
090°15.0'E	49°19.50'N	45°32.11'N	47°20.95'N	11:01:26	23.8	271.0	251.4	02m07.3s
090°22.5'E	49°12.20'N	45°25.76'N	47°14.16'N	11:01:40	23.6	271.1	251.3	02m07.1s
090°30.0'E	49°04.93'N	45°19.43'N	47°07.39'N	11:01:53	23.5	271.3	251.3	02m06.9s
090°37.5'E	48°57.69'N	45°13.13'N	47°00.66'N	11:02:06	23.4	271.5	251.2	02m06.6s
090°45.0'E	48°50.47'N	45°06.86'N	46°53.95'N	11:02:20	23.3	271.7	251.1	02m06.4s
090°52.5'E	48°43.29'N	45°00.62'N	46°47.27'N	11:02:33	23.1	271.9	251.1	02m06.2s
091°00.0'E	48°36.14'N	44°54.40'N	46°40.62'N	11:02:46	23.0	272.0	251.0	02m05.9s
091°07.5'E	48°29.02'N	44°48.21'N	46°34.00'N	11:02:59	22.9	272.2	251.0	02m05.7s
091°15.0'E	48°21.93'N	44°42.05'N	46°27.41'N	11:03:12	22.8	272.4	250.9	02m05.4s
091°22.5'E	48°14.87'N	44°35.91'N	46°20.84'N	11:03:24	22.6	272.5	250.8	02m05.2s

Table 7b (CONTINUED)

MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
091°30.0'E	48°07.84'N	44°29.80'N	46°14.31'N	11:03:37	22.5	272.7	250.7	02m05.0s
091°37.5'E	48°00.84'N	44°23.72'N	46°07.80'N	11:03:50	22.4	272.9	250.6	02m04.7s
091°45.0'E	47°53.88'N	44°17.66'N	46°01.33'N	11:04:02	22.2	273.1	250.6	02m04.5s
091°52.5'E	47°46.94'N	44°11.64'N	45°54.88'N	11:04:14	22.1	273.2	250.5	02m04.3s
092°00.0'E	47°40.04'N	44°05.64'N	45°48.46'N	11:04:27	22.0	273.4	250.4	02m04.0s
092°07.5'E	47°33.16'N	43°59.66'N	45°42.07'N	11:04:39	21.9	273.6	250.3	02m03.8s
092°15.0'E	47°26.32'N	43°53.72'N	45°35.70'N	11:04:51	21.7	273.7	250.2	02m03.6s
092°22.5'E	47°19.51'N	43°47.80'N	45°29.37'N	11:05:03	21.6	273.9	250.1	02m03.3s
092°30.0'E	47°12.72'N	43°41.90'N	45°23.07'N	11:05:15	21.5	274.0	250.0	02m03.1s
092°37.5'E	47°05.97'N	43°36.04'N	45°16.79'N	11:05:27	21.3	274.2	249.8	02m02.8s
092°45.0'E	46°59.25'N	43°30.20'N	45°10.55'N	11:05:39	21.2	274.4	249.7	02m02.6s
092°52.5'E	46°52.57'N	43°24.39'N	45°04.33'N	11:05:50	21.1	274.5	249.6	02m02.4s
093°00.0'E	46°45.91'N	43°18.60'N	44°58.14'N	11:06:02	20.9	274.7	249.5	02m02.1s
093°07.5'E	46°39.29'N	43°12.85'N	44°51.98'N	11:06:13	20.8	274.8	249.4	02m01.9s
093°15.0'E	46°32.69'N	43°07.12'N	44°45.85'N	11:06:24	20.7	275.0	249.2	02m01.7s
093°22.5'E	46°26.13'N	43°01.41'N	44°39.75'N	11:06:36	20.6	275.2	249.1	02m01.4s
093°30.0'E	46°19.60'N	42°55.73'N	44°33.67'N	11:06:47	20.4	275.3	249.0	02m01.2s
093°37.5'E	46°13.10'N	42°50.08'N	44°27.63'N	11:06:58	20.3	275.5	248.8	02m00.9s
093°45.0'E	46°06.63'N	42°44.46'N	44°21.61'N	11:07:09	20.2	275.6	248.7	02m00.7s
093°52.5'E	46°00.19'N	42°38.86'N	44°15.63'N	11:07:20	20.0	275.8	248.5	02m00.5s
094°00.0'E	45°53.78'N	42°33.29'N	44°09.67'N	11:07:31	19.9	275.9	248.4	02m00.2s
094°07.5'E	45°47.41'N	42°27.75'N	44°03.74'N	11:07:41	19.8	276.1	248.2	02m00.0s
094°15.0'E	45°41.06'N	42°22.23'N	43°57.84'N	11:07:52	19.6	276.2	248.0	01m59.8s
094°22.5'E	45°34.75'N	42°16.74'N	43°51.96'N	11:08:02	19.5	276.4	247.9	01m59.5s
094°30.0'E	45°28.46'N	42°11.28'N	43°46.12'N	11:08:13	19.4	276.5	247.7	01m59.3s
094°37.5'E	45°22.21'N	42°05.84'N	43°40.30'N	11:08:23	19.2	276.6	247.5	01m59.0s
094°45.0'E	45°15.99'N	42°00.43'N	43°34.52'N	11:08:33	19.1	276.8	247.4	01m58.8s
094°52.5'E	45°09.80'N	41°55.04'N	43°28.76'N	11:08:44	19.0	276.9	247.2	01m58.6s
095°00.0'E	45°03.64'N	41°49.68'N	43°23.03'N	11:08:54	18.8	277.1	247.0	01m58.3s
095°07.5'E	44°57.51'N	41°44.35'N	43°17.32'N	11:09:04	18.7	277.2	246.8	01m58.1s
095°15.0'E	44°51.41'N	41°39.04'N	43°11.65'N	11:09:13	18.6	277.4	246.6	01m57.9s
095°22.5'E	44°45.34'N	41°33.76'N	43°06.00'N	11:09:23	18.4	277.5	246.5	01m57.6s
095°30.0'E	44°39.30'N	41°28.50'N	43°00.38'N	11:09:33	18.3	277.6	246.3	01m57.4s
095°37.5'E	44°33.30'N	41°23.27'N	42°54.79'N	11:09:42	18.2	277.8	246.1	01m57.2s
095°45.0'E	44°27.32'N	41°18.07'N	42°49.23'N	11:09:52	18.1	277.9	245.9	01m56.9s
095°52.5'E	44°21.38'N	41°12.89'N	42°43.70'N	11:10:01	17.9	278.0	245.7	01m56.7s
096°00.0'E	44°15.46'N	41°07.74'N	42°38.19'N	11:10:11	17.8	278.2	245.5	01m56.5s
096°07.5'E	44°09.57'N	41°02.61'N	42°32.71'N	11:10:20	17.7	278.3	245.3	01m56.2s
096°15.0'E	44°03.72'N	40°57.51'N	42°27.26'N	11:10:29	17.5	278.5	245.0	01m56.0s
096°22.5'E	43°57.89'N	40°52.44'N	42°21.83'N	11:10:38	17.4	278.6	244.8	01m55.8s
096°30.0'E	43°52.10'N	40°47.39'N	42°16.44'N	11:10:47	17.3	278.7	244.6	01m55.5s
096°37.5'E	43°46.33'N	40°42.36'N	42°11.07'N	11:10:56	17.1	278.8	244.4	01m55.3s
096°45.0'E	43°40.59'N	40°37.36'N	42°05.72'N	11:11:05	17.0	279.0	244.2	01m55.1s
096°52.5'E	43°34.89'N	40°32.39'N	42°00.41'N	11:11:14	16.9	279.1	243.9	01m54.8s
097°00.0'E	43°29.21'N	40°27.44'N	41°55.12'N	11:11:22	16.7	279.2	243.7	01m54.6s
097°07.5'E	43°23.56'N	40°22.51'N	41°49.86'N	11:11:31	16.6	279.4	243.5	01m54.4s
097°15.0'E	43°17.94'N	40°17.61'N	41°44.63'N	11:11:39	16.5	279.5	243.2	01m54.1s
097°22.5'E	43°12.36'N	40°12.74'N	41°39.42'N	11:11:48	16.3	279.6	243.0	01m53.9s
097°30.0'E	43°06.80'N	40°07.89'N	41°34.24'N	11:11:56	16.2	279.7	242.8	01m53.7s
097°37.5'E	43°01.26'N	40°03.06'N	41°29.08'N	11:12:04	16.1	279.9	242.5	01m53.4s
097°45.0'E	42°55.76'N	39°58.26'N	41°23.96'N	11:12:12	15.9	280.0	242.3	01m53.2s
097°52.5'E	42°50.29'N	39°53.48'N	41°18.86'N	11:12:20	15.8	280.1	242.0	01m53.0s

Table 7b (CONTINUED)

MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
098°00.0'E	42°44.85'N	39°48.73'N	41°13.78'N	11:12:28	15.7	280.2	241.8	01m52.8s
098°07.5'E	42°39.43'N	39°44.00'N	41°08.73'N	11:12:36	15.5	280.3	241.5	01m52.5s
098°15.0'E	42°34.04'N	39°39.30'N	41°03.71'N	11:12:44	15.4	280.5	241.2	01m52.3s
098°22.5'E	42°28.69'N	39°34.62'N	40°58.71'N	11:12:52	15.3	280.6	241.0	01m52.1s
098°30.0'E	42°23.36'N	39°29.96'N	40°53.74'N	11:12:59	15.1	280.7	240.7	01m51.8s
098°37.5'E	42°18.05'N	39°25.33'N	40°48.80'N	11:13:07	15.0	280.8	240.5	01m51.6s
098°45.0'E	42°12.78'N	39°20.72'N	40°43.88'N	11:13:14	14.9	280.9	240.2	01m51.4s
098°52.5'E	42°07.53'N	39°16.14'N	40°38.99'N	11:13:22	14.8	281.1	239.9	01m51.2s
099°00.0'E	42°02.32'N	39°11.58'N	40°34.12'N	11:13:29	14.6	281.2	239.7	01m50.9s
099°07.5'E	41°57.13'N	39°07.04'N	40°29.28'N	11:13:36	14.5	281.3	239.4	01m50.7s
099°15.0'E	41°51.97'N	39°02.53'N	40°24.46'N	11:13:43	14.4	281.4	239.1	01m50.5s
099°22.5'E	41°46.83'N	38°58.04'N	40°19.67'N	11:13:50	14.2	281.5	238.8	01m50.3s
099°30.0'E	41°41.72'N	38°53.57'N	40°14.90'N	11:13:57	14.1	281.6	238.5	01m50.0s
099°37.5'E	41°36.64'N	38°49.13'N	40°10.16'N	11:14:04	14.0	281.7	238.3	01m49.8s
099°45.0'E	41°31.59'N	38°44.71'N	40°05.45'N	11:14:11	13.8	281.9	238.0	01m49.6s
099°52.5'E	41°26.57'N	38°40.31'N	40°00.76'N	11:14:18	13.7	282.0	237.7	01m49.4s
100°00.0'E	41°21.57'N	38°35.93'N	39°56.09'N	11:14:24	13.6	282.1	237.4	01m49.2s
100°07.5'E	41°16.60'N	38°31.58'N	39°51.45'N	11:14:31	13.4	282.2	237.1	01m48.9s
100°15.0'E	41°11.65'N	38°27.25'N	39°46.83'N	11:14:37	13.3	282.3	236.8	01m48.7s
100°22.5'E	41°06.73'N	38°22.95'N	39°42.24'N	11:14:44	13.2	282.4	236.5	01m48.5s
100°30.0'E	41°01.84'N	38°18.66'N	39°37.67'N	11:14:50	13.0	282.5	236.2	01m48.3s
100°37.5'E	40°56.98'N	38°14.40'N	39°33.13'N	11:14:57	12.9	282.6	235.9	01m48.0s
100°45.0'E	40°52.14'N	38°10.16'N	39°28.61'N	11:15:03	12.8	282.7	235.6	01m47.8s
100°52.5'E	40°47.33'N	38°05.95'N	39°24.11'N	11:15:09	12.7	282.8	235.3	01m47.6s
101°00.0'E	40°42.54'N	38°01.75'N	39°19.64'N	11:15:15	12.5	282.9	235.0	01m47.4s
101°07.5'E	40°37.78'N	37°57.58'N	39°15.19'N	11:15:21	12.4	283.0	234.7	01m47.2s
101°15.0'E	40°33.05'N	37°53.43'N	39°10.77'N	11:15:27	12.3	283.2	234.4	01m47.0s
101°22.5'E	40°28.34'N	37°49.30'N	39°06.37'N	11:15:33	12.1	283.3	234.1	01m46.7s
101°30.0'E	40°23.66'N	37°45.19'N	39°01.99'N	11:15:38	12.0	283.4	233.8	01m46.5s
101°37.5'E	40°19.00'N	37°41.11'N	38°57.64'N	11:15:44	11.9	283.5	233.4	01m46.3s
101°45.0'E	40°14.37'N	37°37.05'N	38°53.31'N	11:15:50	11.8	283.6	233.1	01m46.1s
101°52.5'E	40°09.76'N	37°33.00'N	38°49.00'N	11:15:55	11.6	283.7	232.8	01m45.9s
102°00.0'E	40°05.18'N	37°28.98'N	38°44.72'N	11:16:01	11.5	283.8	232.5	01m45.7s
102°07.5'E	40°00.62'N	37°24.99'N	38°40.46'N	11:16:06	11.4	283.9	232.2	01m45.5s
102°15.0'E	39°56.09'N	37°21.01'N	38°36.22'N	11:16:11	11.2	284.0	231.8	01m45.2s
102°22.5'E	39°51.59'N	37°17.05'N	38°32.01'N	11:16:17	11.1	284.1	231.5	01m45.0s
102°30.0'E	39°47.10'N	37°13.12'N	38°27.82'N	11:16:22	11.0	284.2	231.2	01m44.8s
102°37.5'E	39°42.65'N	37°09.20'N	38°23.65'N	11:16:27	10.9	284.3	230.9	01m44.6s
102°45.0'E	39°38.22'N	37°05.31'N	38°19.50'N	11:16:32	10.7	284.4	230.5	01m44.4s
102°52.5'E	39°33.81'N	37°01.44'N	38°15.38'N	11:16:37	10.6	284.5	230.2	01m44.2s
103°00.0'E	39°29.42'N	36°57.59'N	38°11.28'N	11:16:42	10.5	284.6	229.9	01m44.0s
103°07.5'E	39°25.06'N	36°53.76'N	38°07.20'N	11:16:46	10.3	284.7	229.6	01m43.8s
103°15.0'E	39°20.73'N	36°49.95'N	38°03.14'N	11:16:51	10.2	284.7	229.2	01m43.6s
103°22.5'E	39°16.42'N	36°46.16'N	37°59.11'N	11:16:56	10.1	284.8	228.9	01m43.3s
103°30.0'E	39°12.13'N	36°42.39'N	37°55.09'N	11:17:01	10.0	284.9	228.6	01m43.1s
103°37.5'E	39°07.87'N	36°38.64'N	37°51.10'N	11:17:05	9.8	285.0	228.2	01m42.9s
103°45.0'E	39°03.62'N	36°34.91'N	37°47.13'N	11:17:10	9.7	285.1	227.9	01m42.7s
103°52.5'E	38°59.41'N	36°31.20'N	37°43.18'N	11:17:14	9.6	285.2	227.5	01m42.5s
104°00.0'E	38°55.21'N	36°27.51'N	37°39.26'N	11:17:18	9.5	285.3	227.2	01m42.3s
104°07.5'E	38°51.04'N	36°23.84'N	37°35.35'N	11:17:23	9.3	285.4	226.9	01m42.1s
104°15.0'E	38°46.90'N	36°20.19'N	37°31.47'N	11:17:27	9.2	285.5	226.5	01m41.9s
104°22.5'E	38°42.77'N	36°16.57'N	37°27.61'N	11:17:31	9.1	285.6	226.2	01m41.7s



Table 7b (CONTINUED)

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
104°30.0'E	38°38.67'N	36°12.96'N	37°23.77'N	11:17:35	8.9	285.7	225.8	01m41.5s
104°37.5'E	38°34.59'N	36°09.37'N	37°19.95'N	11:17:39	8.8	285.8	225.5	01m41.3s
104°45.0'E	38°30.54'N	36°05.80'N	37°16.15'N	11:17:43	8.7	285.9	225.1	01m41.1s
104°52.5'E	38°26.51'N	36°02.25'N	37°12.37'N	11:17:47	8.6	286.0	224.8	01m40.9s
105°00.0'E	38°22.50'N	35°58.72'N	37°08.61'N	11:17:51	8.4	286.0	224.5	01m40.7s
105°07.5'E	38°18.51'N	35°55.20'N	37°04.88'N	11:17:54	8.3	286.1	224.1	01m40.5s
105°15.0'E	38°14.54'N	35°51.71'N	37°01.16'N	11:17:58	8.2	286.2	223.8	01m40.3s
105°22.5'E	38°10.60'N	35°48.24'N	36°57.47'N	11:18:02	8.1	286.3	223.4	01m40.1s
105°30.0'E	38°06.68'N	35°44.78'N	36°53.79'N	11:18:05	7.9	286.4	223.1	01m39.9s
105°37.5'E	38°02.78'N	35°41.35'N	36°50.14'N	11:18:09	7.8	286.5	222.7	01m39.7s
105°45.0'E	37°58.90'N	35°37.93'N	36°46.51'N	11:18:12	7.7	286.6	222.4	01m39.5s
105°52.5'E	37°55.05'N	35°34.53'N	36°42.89'N	11:18:16	7.6	286.7	222.0	01m39.3s
106°00.0'E	37°51.21'N	35°31.16'N	36°39.30'N	11:18:19	7.5	286.7	221.7	01m39.1s
106°07.5'E	37°47.40'N	35°27.79'N	36°35.72'N	11:18:22	7.3	286.8	221.3	01m38.9s
106°15.0'E	37°43.61'N	35°24.45'N	36°32.17'N	11:18:25	7.2	286.9	220.9	01m38.7s
106°22.5'E	37°39.84'N	35°21.13'N	36°28.64'N	11:18:29	7.1	287.0	220.6	01m38.5s
106°30.0'E	37°36.09'N	35°17.83'N	36°25.12'N	11:18:32	7.0	287.1	220.2	01m38.3s
106°37.5'E	37°32.36'N	35°14.54'N	36°21.63'N	11:18:35	6.8	287.2	219.9	01m38.1s
106°45.0'E	37°28.66'N	35°11.27'N	36°18.15'N	11:18:38	6.7	287.3	219.5	01m37.9s
106°52.5'E	37°24.97'N	35°08.02'N	36°14.70'N	11:18:41	6.6	287.3	219.2	01m37.7s
107°00.0'E	37°21.31'N	35°04.79'N	36°11.26'N	11:18:43	6.5	287.4	218.8	01m37.5s
107°07.5'E	37°17.67'N	35°01.57'N	36°07.84'N	11:18:46	6.3	287.5	218.5	01m37.3s
107°15.0'E	37°14.04'N	34°58.38'N	36°04.45'N	11:18:49	6.2	287.6	218.1	01m37.2s
107°22.5'E	37°10.44'N	34°55.20'N	36°01.07'N	11:18:52	6.1	287.7	217.8	01m37.0s
107°30.0'E	37°06.86'N	34°52.04'N	35°57.71'N	11:18:54	6.0	287.8	217.4	01m36.8s
107°37.5'E	37°03.30'N	34°48.90'N	35°54.37'N	11:18:57	5.9	287.8	217.0	01m36.6s
107°45.0'E	36°59.76'N	34°45.77'N	35°51.04'N	11:18:59	5.7	287.9	216.7	01m36.4s
107°52.5'E	36°56.24'N	34°42.66'N	35°47.74'N	11:19:02	5.6	288.0	216.3	01m36.2s
108°00.0'E	36°52.74'N	34°39.57'N	35°44.46'N	11:19:04	5.5	288.1	216.0	01m36.0s
108°07.5'E	36°49.26'N	34°36.50'N	35°41.19'N	11:19:06	5.4	288.2	215.6	01m35.8s
108°15.0'E	36°45.80'N	34°33.45'N	35°37.94'N	11:19:09	5.3	288.2	215.2	01m35.6s
108°22.5'E	36°42.36'N	34°30.41'N	35°34.72'N	11:19:11	5.1	288.3	214.9	01m35.5s
108°30.0'E	36°38.93'N	34°27.39'N	35°31.50'N	11:19:13	5.0	288.4	214.5	01m35.3s
108°37.5'E	36°35.53'N	34°24.38'N	35°28.31'N	11:19:15	4.9	288.5	214.2	01m35.1s
108°45.0'E	36°32.15'N	34°21.39'N	35°25.14'N	11:19:17	4.8	288.6	213.8	01m34.9s
108°52.5'E	36°28.79'N	34°18.42'N	35°21.98'N	11:19:19	4.7	288.6	213.5	01m34.7s
109°00.0'E	36°25.45'N	34°15.47'N	35°18.84'N	11:19:21	4.5	288.7	213.1	01m34.5s
109°07.5'E	36°22.12'N	34°12.54'N	35°15.72'N	11:19:23	4.4	288.8	212.7	01m34.3s
109°15.0'E	36°18.82'N	34°09.62'N	35°12.62'N	11:19:25	4.3	288.9	212.4	01m34.2s
109°22.5'E	36°15.53'N	34°06.71'N	35°09.54'N	11:19:27	4.2	288.9	212.0	01m34.0s
109°30.0'E	36°12.26'N	34°03.83'N	35°06.47'N	11:19:28	4.1	289.0	211.7	01m33.8s
109°37.5'E	36°09.02'N	34°00.96'N	35°03.42'N	11:19:30	3.9	289.1	211.3	01m33.6s
109°45.0'E	36°05.79'N	33°58.10'N	35°00.39'N	11:19:32	3.8	289.2	210.9	01m33.4s
109°52.5'E	36°02.58'N	33°55.27'N	34°57.38'N	11:19:33	3.7	289.2	210.6	01m33.3s
110°00.0'E	35°59.39'N	33°52.45'N	34°54.38'N	11:19:35	3.6	289.3	210.2	01m33.1s
110°07.5'E	35°56.21'N	33°49.64'N	34°51.40'N	11:19:36	3.5	289.4	209.9	01m32.9s
110°15.0'E	35°53.06'N	33°46.85'N	34°48.44'N	11:19:38	3.3	289.5	209.5	01m32.7s
110°22.5'E	35°49.92'N	33°44.08'N	34°45.49'N	11:19:39	3.2	289.6	209.2	01m32.5s
110°30.0'E	35°46.80'N	33°41.33'N	34°42.56'N	11:19:40	3.1	289.6	208.8	01m32.4s
110°37.5'E	35°43.70'N	33°38.59'N	34°39.65'N	11:19:41	3.0	289.7	208.4	01m32.2s
110°45.0'E	35°40.62'N	33°35.86'N	34°36.76'N	11:19:43	2.9	289.8	208.1	01m32.0s
110°52.5'E	35°37.56'N	33°33.15'N	34°33.88'N	11:19:44	2.8	289.8	207.7	01m31.8s

**Table 7b (CONTINUED)**

**MAPPING COORDINATES FOR THE UMBRAL PATH  
TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01**

Longitude	Latitude of:			Circumstances on Central Line				
	Northern Limit	Southern Limit	Central Line	Universal Time h m s	Sun Alt °	Sun Az. °	Path Width km	Central Durat.
111°00.0'E	35°34.51'N	33°30.46'N	34°31.02'N	11:19:45	2.6	289.9	207.4	01m31.7s
111°07.5'E	35°31.48'N	33°27.78'N	34°28.18'N	11:19:46	2.5	290.0	207.0	01m31.5s
111°15.0'E	35°28.47'N	33°25.12'N	34°25.35'N	11:19:47	2.4	290.1	206.7	01m31.3s
111°22.5'E	35°25.48'N	33°22.48'N	34°22.54'N	11:19:48	2.3	290.1	206.3	01m31.1s
111°30.0'E	35°22.51'N	33°19.85'N	34°19.75'N	11:19:49	2.2	290.2	206.0	01m31.0s
111°37.5'E	35°19.55'N	33°17.23'N	34°16.97'N	11:19:50	2.1	290.3	205.6	01m30.8s
111°45.0'E	35°16.61'N	33°14.63'N	34°14.21'N	11:19:51	1.9	290.4	205.2	01m30.6s
111°52.5'E	35°13.69'N	33°12.05'N	34°11.46'N	11:19:51	1.8	290.4	204.9	01m30.4s
112°00.0'E	35°10.78'N	33°09.48'N	34°08.73'N	11:19:52	1.7	290.5	204.5	01m30.3s
112°07.5'E	35°07.90'N	33°06.93'N	34°06.02'N	11:19:53	1.6	290.6	204.2	01m30.1s
112°15.0'E	35°05.03'N	33°04.39'N	34°03.33'N	11:19:53	1.5	290.6	203.8	01m29.9s
112°22.5'E	35°02.17'N	33°01.87'N	34°00.65'N	11:19:54	1.4	290.7	203.5	01m29.8s
112°30.0'E	34°59.34'N	32°59.36'N	33°57.98'N	11:19:54	1.3	290.8	203.1	01m29.6s
112°37.5'E	34°56.52'N	32°56.87'N	33°55.33'N	11:19:55	1.1	290.9	202.8	01m29.4s
112°45.0'E	34°53.71'N	32°54.39'N	33°52.70'N	11:19:55	1.0	290.9	202.4	01m29.3s
112°52.5'E	34°50.93'N	32°51.92'N	33°50.08'N	11:19:56	0.9	291.0	202.1	01m29.1s
113°00.0'E	34°48.16'N	32°49.47'N	33°47.48'N	11:19:56	0.8	291.1	201.7	01m28.9s
113°07.5'E	34°45.41'N	32°47.04'N	33°44.90'N	11:19:56	0.7	291.1	201.4	01m28.8s
113°15.0'E	34°42.67'N		33°42.33'N	11:19:57	0.6	291.2	201.0	01m28.6s
113°22.5'E	34°39.95'N		33°39.77'N	11:19:57	0.5	291.3	200.7	01m28.4s
113°30.0'E	34°37.25'N		33°37.23'N	11:19:57	0.4	291.4	200.3	01m28.3s
113°37.5'E	34°34.56'N		33°34.71'N	11:19:57	0.2	291.4	200.0	01m28.1s