

# ANNULAR SOLAR ECLIPSE OF 2012 MAY 20

TABLE 7 – MAPPING COORDINATES FOR THE ANNULAR PATH

$\Delta T = 66.7 \text{ s}$

| Longitude  | Latitude of:   |                |              | Circumstances on Central Line |              |              |                  |                |
|------------|----------------|----------------|--------------|-------------------------------|--------------|--------------|------------------|----------------|
|            | Northern Limit | Southern Limit | Central Line | Universal Time<br>h m s       | Sun Alt<br>° | Sun Az.<br>° | Path Width<br>km | Central Durat. |
| 109°00.0'E | 22°51.26'N     | —              | 21°15.86'N   | 22:09:01                      | 0.3          | 68.4         | 324.2            | 04m22.9s       |
| 110°00.0'E | 23°14.05'N     | 20°04.48'N     | 21°38.62'N   | 22:09:03                      | 1.3          | 68.7         | 323.3            | 04m23.9s       |
| 111°00.0'E | 23°37.24'N     | 20°27.62'N     | 22°01.78'N   | 22:09:08                      | 2.3          | 69.1         | 322.5            | 04m24.9s       |
| 112°00.0'E | 24°00.83'N     | 20°51.17'N     | 22°25.35'N   | 22:09:15                      | 3.4          | 69.5         | 321.6            | 04m25.9s       |
| 113°00.0'E | 24°24.82'N     | 21°15.13'N     | 22°49.33'N   | 22:09:25                      | 4.4          | 69.9         | 320.7            | 04m26.9s       |
| 114°00.0'E | 24°49.21'N     | 21°39.49'N     | 23°13.70'N   | 22:09:38                      | 5.5          | 70.3         | 319.7            | 04m27.9s       |
| 115°00.0'E | 25°14.00'N     | 22°04.27'N     | 23°38.49'N   | 22:09:54                      | 6.5          | 70.8         | 318.7            | 04m29.0s       |
| 116°00.0'E | 25°39.19'N     | 22°29.46'N     | 24°03.68'N   | 22:10:13                      | 7.6          | 71.2         | 317.6            | 04m30.1s       |
| 117°00.0'E | 26°04.78'N     | 22°55.06'N     | 24°29.27'N   | 22:10:34                      | 8.7          | 71.7         | 316.6            | 04m31.2s       |
| 118°00.0'E | 26°30.76'N     | 23°21.07'N     | 24°55.26'N   | 22:10:59                      | 9.7          | 72.1         | 315.4            | 04m32.4s       |
| 119°00.0'E | 26°57.12'N     | 23°47.48'N     | 25°21.65'N   | 22:11:27                      | 10.8         | 72.6         | 314.3            | 04m33.6s       |
| 120°00.0'E | 27°23.86'N     | 24°14.29'N     | 25°48.43'N   | 22:11:58                      | 11.9         | 73.2         | 313.0            | 04m34.8s       |
| 121°00.0'E | 27°50.98'N     | 24°41.50'N     | 26°15.60'N   | 22:12:33                      | 13.1         | 73.7         | 311.8            | 04m36.0s       |
| 122°00.0'E | 28°18.47'N     | 25°09.10'N     | 26°43.15'N   | 22:13:11                      | 14.2         | 74.2         | 310.5            | 04m37.3s       |
| 123°00.0'E | 28°46.31'N     | 25°37.09'N     | 27°11.07'N   | 22:13:52                      | 15.3         | 74.8         | 309.1            | 04m38.6s       |
| 124°00.0'E | 29°14.49'N     | 26°05.45'N     | 27°39.34'N   | 22:14:37                      | 16.5         | 75.4         | 307.7            | 04m39.9s       |
| 125°00.0'E | 29°43.01'N     | 26°34.17'N     | 28°07.97'N   | 22:15:25                      | 17.6         | 76.0         | 306.3            | 04m41.3s       |
| 126°00.0'E | 30°11.84'N     | 27°03.25'N     | 28°36.93'N   | 22:16:17                      | 18.8         | 76.7         | 304.8            | 04m42.7s       |
| 127°00.0'E | 30°40.97'N     | 27°32.67'N     | 29°06.21'N   | 22:17:13                      | 19.9         | 77.4         | 303.2            | 04m44.1s       |
| 128°00.0'E | 31°10.38'N     | 28°02.41'N     | 29°35.80'N   | 22:18:12                      | 21.1         | 78.1         | 301.7            | 04m45.6s       |
| 129°00.0'E | 31°40.05'N     | 28°32.46'N     | 30°05.67'N   | 22:19:15                      | 22.3         | 78.8         | 300.0            | 04m47.1s       |
| 130°00.0'E | 32°09.96'N     | 29°02.80'N     | 30°35.80'N   | 22:20:22                      | 23.4         | 79.6         | 298.4            | 04m48.6s       |
| 131°00.0'E | 32°40.08'N     | 29°33.41'N     | 31°06.17'N   | 22:21:33                      | 24.6         | 80.4         | 296.6            | 04m50.1s       |
| 132°00.0'E | 33°10.39'N     | 30°04.25'N     | 31°36.76'N   | 22:22:47                      | 25.8         | 81.2         | 294.9            | 04m51.7s       |
| 133°00.0'E | 33°40.85'N     | 30°35.31'N     | 32°07.54'N   | 22:24:05                      | 27.0         | 82.1         | 293.1            | 04m53.3s       |
| 134°00.0'E | 34°11.44'N     | 31°06.56'N     | 32°38.47'N   | 22:25:27                      | 28.2         | 83.0         | 291.3            | 04m54.9s       |
| 135°00.0'E | 34°42.12'N     | 31°37.97'N     | 33°09.52'N   | 22:26:53                      | 29.4         | 83.9         | 289.4            | 04m56.5s       |
| 136°00.0'E | 35°12.86'N     | 32°09.50'N     | 33°40.67'N   | 22:28:22                      | 30.6         | 84.9         | 287.5            | 04m58.2s       |
| 137°00.0'E | 35°43.62'N     | 32°41.11'N     | 34°11.87'N   | 22:29:55                      | 31.8         | 86.0         | 285.6            | 04m59.9s       |
| 138°00.0'E | 36°14.36'N     | 33°12.78'N     | 34°43.09'N   | 22:31:31                      | 32.9         | 87.0         | 283.7            | 05m01.6s       |
| 139°00.0'E | 36°45.05'N     | 33°44.47'N     | 35°14.29'N   | 22:33:11                      | 34.1         | 88.2         | 281.8            | 05m03.3s       |
| 140°00.0'E | 37°15.64'N     | 34°16.12'N     | 35°45.43'N   | 22:34:54                      | 35.3         | 89.3         | 279.8            | 05m05.0s       |
| 141°00.0'E | 37°46.09'N     | 34°47.71'N     | 36°16.46'N   | 22:36:40                      | 36.5         | 90.5         | 277.9            | 05m06.8s       |
| 142°00.0'E | 38°16.36'N     | 35°19.18'N     | 36°47.35'N   | 22:38:30                      | 37.6         | 91.8         | 276.0            | 05m08.5s       |
| 143°00.0'E | 38°46.41'N     | 35°50.49'N     | 37°18.04'N   | 22:40:22                      | 38.8         | 93.1         | 274.0            | 05m10.2s       |
| 144°00.0'E | 39°16.20'N     | 36°21.61'N     | 37°48.50'N   | 22:42:17                      | 39.9         | 94.5         | 272.1            | 05m12.0s       |
| 145°00.0'E | 39°45.69'N     | 36°52.47'N     | 38°18.69'N   | 22:44:15                      | 41.0         | 96.0         | 270.2            | 05m13.7s       |
| 146°00.0'E | 40°14.82'N     | 37°23.05'N     | 38°48.56'N   | 22:46:15                      | 42.1         | 97.5         | 268.4            | 05m15.4s       |
| 147°00.0'E | 40°43.58'N     | 37°53.29'N     | 39°18.06'N   | 22:48:18                      | 43.2         | 99.0         | 266.5            | 05m17.1s       |
| 148°00.0'E | 41°11.91'N     | 38°23.15'N     | 39°47.17'N   | 22:50:23                      | 44.3         | 100.6        | 264.7            | 05m18.8s       |
| 149°00.0'E | 41°39.79'N     | 38°52.59'N     | 40°15.83'N   | 22:52:29                      | 45.4         | 102.3        | 262.9            | 05m20.4s       |
| 150°00.0'E | 42°07.17'N     | 39°21.57'N     | 40°44.02'N   | 22:54:38                      | 46.4         | 104.1        | 261.2            | 05m22.1s       |
| 151°00.0'E | 42°34.03'N     | 39°50.05'N     | 41°11.69'N   | 22:56:48                      | 47.4         | 105.9        | 259.5            | 05m23.7s       |
| 152°00.0'E | 43°00.34'N     | 40°17.99'N     | 41°38.82'N   | 22:58:59                      | 48.4         | 107.7        | 257.9            | 05m25.2s       |
| 153°00.0'E | 43°26.07'N     | 40°45.37'N     | 42°05.37'N   | 23:01:11                      | 49.3         | 109.7        | 256.3            | 05m26.8s       |
| 154°00.0'E | 43°51.19'N     | 41°12.14'N     | 42°31.31'N   | 23:03:25                      | 50.2         | 111.7        | 254.8            | 05m28.3s       |

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| Longitude  | Latitude of:   |                |              | Circumstances on Central Line |              |              |                  |                     |
|------------|----------------|----------------|--------------|-------------------------------|--------------|--------------|------------------|---------------------|
|            | Northern Limit | Southern Limit | Central Line | Universal Time<br>h m s       | Sun Alt<br>° | Sun Az.<br>° | Path Width<br>km | Central Durat.<br>s |
| 155°00.0'E | 44°15.69'N     | 41°38.28'N     | 42°56.63'N   | 23:05:39                      | 51.1         | 113.8        | 253.4            | 05m29.7s            |
| 156°00.0'E | 44°39.53'N     | 42°03.76'N     | 43°21.30'N   | 23:07:54                      | 52.0         | 115.9        | 252.0            | 05m31.1s            |
| 157°00.0'E | 45°02.72'N     | 42°28.57'N     | 43°45.29'N   | 23:10:10                      | 52.8         | 118.1        | 250.6            | 05m32.5s            |
| 158°00.0'E | 45°25.23'N     | 42°52.68'N     | 44°08.59'N   | 23:12:26                      | 53.6         | 120.4        | 249.4            | 05m33.8s            |
| 159°00.0'E | 45°47.05'N     | 43°16.07'N     | 44°31.19'N   | 23:14:42                      | 54.4         | 122.7        | 248.2            | 05m35.0s            |
| 160°00.0'E | 46°08.16'N     | 43°38.72'N     | 44°53.07'N   | 23:16:58                      | 55.1         | 125.1        | 247.0            | 05m36.2s            |
| 161°00.0'E | 46°28.58'N     | 44°00.64'N     | 45°14.23'N   | 23:19:14                      | 55.8         | 127.6        | 245.9            | 05m37.3s            |
| 162°00.0'E | 46°48.27'N     | 44°21.80'N     | 45°34.65'N   | 23:21:30                      | 56.4         | 130.1        | 244.9            | 05m38.4s            |
| 163°00.0'E | 47°07.25'N     | 44°42.19'N     | 45°54.33'N   | 23:23:45                      | 57.0         | 132.7        | 244.0            | 05m39.3s            |
| 164°00.0'E | 47°25.51'N     | 45°01.82'N     | 46°13.27'N   | 23:26:01                      | 57.6         | 135.4        | 243.1            | 05m40.3s            |
| 165°00.0'E | 47°43.06'N     | 45°20.68'N     | 46°31.46'N   | 23:28:16                      | 58.1         | 138.1        | 242.2            | 05m41.1s            |
| 166°00.0'E | 47°59.88'N     | 45°38.76'N     | 46°48.90'N   | 23:30:30                      | 58.6         | 140.9        | 241.5            | 05m41.9s            |
| 167°00.0'E | 48°15.98'N     | 45°56.07'N     | 47°05.60'N   | 23:32:44                      | 59.0         | 143.7        | 240.8            | 05m42.7s            |
| 168°00.0'E | 48°31.37'N     | 46°12.61'N     | 47°21.56'N   | 23:34:57                      | 59.4         | 146.5        | 240.1            | 05m43.3s            |
| 169°00.0'E | 48°46.05'N     | 46°28.38'N     | 47°36.78'N   | 23:37:09                      | 59.7         | 149.4        | 239.5            | 05m43.9s            |
| 170°00.0'E | 49°00.02'N     | 46°43.38'N     | 47°51.26'N   | 23:39:21                      | 60.0         | 152.3        | 239.0            | 05m44.5s            |
| 171°00.0'E | 49°13.30'N     | 46°57.62'N     | 48°05.01'N   | 23:41:31                      | 60.3         | 155.3        | 238.5            | 05m44.9s            |
| 172°00.0'E | 49°25.87'N     | 47°11.10'N     | 48°18.03'N   | 23:43:41                      | 60.5         | 158.2        | 238.1            | 05m45.3s            |
| 173°00.0'E | 49°37.76'N     | 47°23.83'N     | 48°30.33'N   | 23:45:50                      | 60.7         | 161.2        | 237.7            | 05m45.7s            |
| 174°00.0'E | 49°48.96'N     | 47°35.82'N     | 48°41.93'N   | 23:47:59                      | 60.8         | 164.2        | 237.4            | 05m45.9s            |
| 175°00.0'E | 49°59.49'N     | 47°47.07'N     | 48°52.81'N   | 23:50:06                      | 60.9         | 167.2        | 237.2            | 05m46.1s            |
| 176°00.0'E | 50°09.36'N     | 47°57.59'N     | 49°03.00'N   | 23:52:12                      | 60.9         | 170.1        | 237.0            | 05m46.3s            |
| 177°00.0'E | 50°18.55'N     | 48°07.38'N     | 49°12.49'N   | 23:54:18                      | 60.9         | 173.1        | 236.8            | 05m46.4s            |
| 178°00.0'E | 50°27.10'N     | 48°16.46'N     | 49°21.30'N   | 23:56:22                      | 60.8         | 176.0        | 236.7            | 05m46.4s            |
| 179°00.0'E | 50°35.00'N     | 48°24.83'N     | 49°29.43'N   | 23:58:26                      | 60.7         | 179.0        | 236.6            | 05m46.3s            |
| 180°00.0'E | 50°42.25'N     | 48°32.50'N     | 49°36.89'N   | 00:00:28                      | 60.6         | 181.9        | 236.6            | 05m46.2s            |
| 179°00.0'W | 50°48.87'N     | 48°39.48'N     | 49°43.69'N   | 00:02:30                      | 60.4         | 184.7        | 236.6            | 05m46.1s            |
| 178°00.0'W | 50°54.87'N     | 48°45.76'N     | 49°49.83'N   | 00:04:30                      | 60.2         | 187.5        | 236.7            | 05m45.8s            |
| 177°00.0'W | 51°00.24'N     | 48°51.37'N     | 49°55.32'N   | 00:06:30                      | 60.0         | 190.3        | 236.8            | 05m45.6s            |
| 176°00.0'W | 51°05.00'N     | 48°56.31'N     | 50°00.17'N   | 00:08:29                      | 59.7         | 193.1        | 237.0            | 05m45.2s            |
| 175°00.0'W | 51°09.16'N     | 49°00.58'N     | 50°04.38'N   | 00:10:27                      | 59.4         | 195.8        | 237.2            | 05m44.9s            |
| 174°00.0'W | 51°12.71'N     | 49°04.20'N     | 50°07.96'N   | 00:12:24                      | 59.1         | 198.4        | 237.4            | 05m44.4s            |
| 173°00.0'W | 51°15.66'N     | 49°07.16'N     | 50°10.92'N   | 00:14:20                      | 58.7         | 201.0        | 237.7            | 05m43.9s            |
| 172°00.0'W | 51°18.02'N     | 49°09.47'N     | 50°13.26'N   | 00:16:15                      | 58.3         | 203.5        | 238.0            | 05m43.4s            |
| 171°00.0'W | 51°19.80'N     | 49°11.14'N     | 50°14.98'N   | 00:18:09                      | 57.9         | 206.0        | 238.4            | 05m42.8s            |
| 170°00.0'W | 51°20.99'N     | 49°12.18'N     | 50°16.10'N   | 00:20:02                      | 57.4         | 208.5        | 238.7            | 05m42.2s            |
| 169°00.0'W | 51°21.61'N     | 49°12.59'N     | 50°16.62'N   | 00:21:54                      | 57.0         | 210.8        | 239.2            | 05m41.5s            |
| 168°00.0'W | 51°21.66'N     | 49°12.38'N     | 50°16.54'N   | 00:23:45                      | 56.5         | 213.2        | 239.7            | 05m40.8s            |
| 167°00.0'W | 51°21.14'N     | 49°11.54'N     | 50°15.86'N   | 00:25:36                      | 56.0         | 215.5        | 240.2            | 05m40.1s            |
| 166°00.0'W | 51°20.05'N     | 49°10.10'N     | 50°14.60'N   | 00:27:25                      | 55.4         | 217.7        | 240.7            | 05m39.3s            |

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|            | Northern Limit | Southern Limit | Central Line | Universal Time<br>h m s       | Sun Alt<br>° | Sun Az.<br>° | Path Width<br>km | Central Durat.<br>s |
| 165°00.0'W | 51°18.41'N     | 49°08.04'N     | 50°12.75'N   | 00:29:14                      | 54.9         | 219.9        | 241.3            | 05m38.4s            |
| 164°00.0'W | 51°16.21'N     | 49°05.38'N     | 50°10.33'N   | 00:31:01                      | 54.3         | 222.0        | 241.9            | 05m37.5s            |
| 163°00.0'W | 51°13.46'N     | 49°02.12'N     | 50°07.32'N   | 00:32:48                      | 53.7         | 224.1        | 242.6            | 05m36.6s            |
| 162°00.0'W | 51°10.15'N     | 48°58.26'N     | 50°03.75'N   | 00:34:34                      | 53.1         | 226.1        | 243.3            | 05m35.7s            |
| 161°00.0'W | 51°06.31'N     | 48°53.81'N     | 49°59.60'N   | 00:36:19                      | 52.4         | 228.1        | 244.0            | 05m34.7s            |
| 160°00.0'W | 51°01.92'N     | 48°48.77'N     | 49°54.89'N   | 00:38:03                      | 51.8         | 230.1        | 244.8            | 05m33.7s            |
| 159°00.0'W | 50°56.99'N     | 48°43.15'N     | 49°49.62'N   | 00:39:46                      | 51.1         | 232.0        | 245.6            | 05m32.6s            |
| 158°00.0'W | 50°51.52'N     | 48°36.94'N     | 49°43.79'N   | 00:41:28                      | 50.5         | 233.9        | 246.4            | 05m31.6s            |
| 157°00.0'W | 50°45.52'N     | 48°30.17'N     | 49°37.41'N   | 00:43:09                      | 49.8         | 235.7        | 247.3            | 05m30.5s            |
| 156°00.0'W | 50°38.99'N     | 48°22.81'N     | 49°30.47'N   | 00:44:49                      | 49.1         | 237.5        | 248.2            | 05m29.3s            |
| 155°00.0'W | 50°31.93'N     | 48°14.90'N     | 49°22.99'N   | 00:46:28                      | 48.4         | 239.2        | 249.2            | 05m28.2s            |
| 154°00.0'W | 50°24.35'N     | 48°06.41'N     | 49°14.97'N   | 00:48:07                      | 47.6         | 240.9        | 250.1            | 05m27.0s            |
| 153°00.0'W | 50°16.25'N     | 47°57.37'N     | 49°06.40'N   | 00:49:44                      | 46.9         | 242.6        | 251.1            | 05m25.8s            |
| 152°00.0'W | 50°07.63'N     | 47°47.78'N     | 48°57.30'N   | 00:51:20                      | 46.1         | 244.2        | 252.2            | 05m24.6s            |
| 151°00.0'W | 49°58.49'N     | 47°37.63'N     | 48°47.66'N   | 00:52:55                      | 45.4         | 245.8        | 253.2            | 05m23.3s            |
| 150°00.0'W | 49°48.84'N     | 47°26.95'N     | 48°37.50'N   | 00:54:29                      | 44.6         | 247.4        | 254.4            | 05m22.0s            |
| 149°00.0'W | 49°38.69'N     | 47°15.72'N     | 48°26.81'N   | 00:56:01                      | 43.8         | 248.9        | 255.5            | 05m20.8s            |
| 148°00.0'W | 49°28.03'N     | 47°03.96'N     | 48°15.61'N   | 00:57:33                      | 43.0         | 250.4        | 256.7            | 05m19.5s            |
| 147°00.0'W | 49°16.88'N     | 46°51.67'N     | 48°03.89'N   | 00:59:03                      | 42.2         | 251.9        | 257.9            | 05m18.1s            |
| 146°00.0'W | 49°05.23'N     | 46°38.86'N     | 47°51.67'N   | 01:00:33                      | 41.4         | 253.3        | 259.1            | 05m16.8s            |
| 145°00.0'W | 48°53.09'N     | 46°25.54'N     | 47°38.94'N   | 01:02:01                      | 40.6         | 254.7        | 260.3            | 05m15.5s            |
| 144°00.0'W | 48°40.47'N     | 46°11.71'N     | 47°25.72'N   | 01:03:27                      | 39.7         | 256.1        | 261.6            | 05m14.1s            |
| 143°00.0'W | 48°27.37'N     | 45°57.39'N     | 47°12.01'N   | 01:04:53                      | 38.9         | 257.5        | 262.9            | 05m12.8s            |
| 142°00.0'W | 48°13.80'N     | 45°42.58'N     | 46°57.82'N   | 01:06:17                      | 38.0         | 258.8        | 264.3            | 05m11.4s            |
| 141°00.0'W | 47°59.76'N     | 45°27.28'N     | 46°43.16'N   | 01:07:39                      | 37.2         | 260.1        | 265.6            | 05m10.0s            |
| 140°00.0'W | 47°45.27'N     | 45°11.51'N     | 46°28.03'N   | 01:09:00                      | 36.3         | 261.3        | 267.0            | 05m08.6s            |
| 139°00.0'W | 47°30.33'N     | 44°55.29'N     | 46°12.45'N   | 01:10:20                      | 35.4         | 262.6        | 268.4            | 05m07.2s            |
| 138°00.0'W | 47°14.94'N     | 44°38.61'N     | 45°56.42'N   | 01:11:38                      | 34.6         | 263.8        | 269.9            | 05m05.8s            |
| 137°00.0'W | 46°59.12'N     | 44°21.49'N     | 45°39.95'N   | 01:12:55                      | 33.7         | 265.0        | 271.3            | 05m04.4s            |
| 136°00.0'W | 46°42.88'N     | 44°03.95'N     | 45°23.06'N   | 01:14:10                      | 32.8         | 266.2        | 272.8            | 05m03.0s            |
| 135°00.0'W | 46°26.23'N     | 43°45.99'N     | 45°05.75'N   | 01:15:23                      | 31.9         | 267.3        | 274.3            | 05m01.7s            |
| 134°00.0'W | 46°09.17'N     | 43°27.62'N     | 44°48.04'N   | 01:16:35                      | 31.0         | 268.4        | 275.8            | 05m00.3s            |
| 133°00.0'W | 45°51.71'N     | 43°08.87'N     | 44°29.93'N   | 01:17:44                      | 30.0         | 269.5        | 277.3            | 04m58.9s            |
| 132°00.0'W | 45°33.88'N     | 42°49.74'N     | 44°11.45'N   | 01:18:52                      | 29.1         | 270.6        | 278.8            | 04m57.5s            |
| 131°00.0'W | 45°15.67'N     | 42°30.25'N     | 43°52.60'N   | 01:19:58                      | 28.2         | 271.6        | 280.4            | 04m56.1s            |
| 130°00.0'W | 44°57.11'N     | 42°10.42'N     | 43°33.40'N   | 01:21:03                      | 27.3         | 272.7        | 281.9            | 04m54.7s            |
| 129°00.0'W | 44°38.20'N     | 41°50.25'N     | 43°13.85'N   | 01:22:05                      | 26.3         | 273.7        | 283.5            | 04m53.4s            |
| 128°00.0'W | 44°18.96'N     | 41°29.77'N     | 42°53.99'N   | 01:23:05                      | 25.4         | 274.7        | 285.1            | 04m52.0s            |
| 127°00.0'W | 43°59.40'N     | 41°08.98'N     | 42°33.81'N   | 01:24:04                      | 24.5         | 275.6        | 286.6            | 04m50.7s            |
| 126°00.0'W | 43°39.54'N     | 40°47.92'N     | 42°13.34'N   | 01:25:00                      | 23.5         | 276.6        | 288.2            | 04m49.3s            |

# ANNULAR SOLAR ECLIPSE OF 2012 MAY 20

TABLE 7 – MAPPING COORDINATES FOR THE ANNULAR PATH

| Longitude  | Latitude of:   |                |              | Circumstances on Central Line |              |              |                  |                |
|------------|----------------|----------------|--------------|-------------------------------|--------------|--------------|------------------|----------------|
|            | Northern Limit | Southern Limit | Central Line | Universal Time<br>h m s       | Sun Alt<br>° | Sun Az.<br>° | Path Width<br>km | Central Durat. |
| 125°00.0'W | 43°19.39'N     | 40°26.58'N     | 41°52.59'N   | 01:25:54                      | 22.6         | 277.5        | 289.8            | 04m48.0s       |
| 124°00.0'W | 42°58.96'N     | 40°04.99'N     | 41°31.57'N   | 01:26:46                      | 21.6         | 278.4        | 291.3            | 04m46.7s       |
| 123°00.0'W | 42°38.27'N     | 39°43.17'N     | 41°10.31'N   | 01:27:36                      | 20.7         | 279.3        | 292.9            | 04m45.4s       |
| 122°00.0'W | 42°17.34'N     | 39°21.13'N     | 40°48.82'N   | 01:28:24                      | 19.7         | 280.1        | 294.5            | 04m44.1s       |
| 121°00.0'W | 41°56.18'N     | 38°58.88'N     | 40°27.11'N   | 01:29:10                      | 18.8         | 281.0        | 296.0            | 04m42.8s       |
| 120°00.0'W | 41°34.80'N     | 38°36.46'N     | 40°05.20'N   | 01:29:53                      | 17.8         | 281.8        | 297.6            | 04m41.6s       |
| 119°00.0'W | 41°13.23'N     | 38°13.86'N     | 39°43.10'N   | 01:30:34                      | 16.9         | 282.6        | 299.1            | 04m40.4s       |
| 118°00.0'W | 40°51.47'N     | 37°51.11'N     | 39°20.84'N   | 01:31:13                      | 15.9         | 283.4        | 300.6            | 04m39.1s       |
| 117°00.0'W | 40°29.54'N     | 37°28.23'N     | 38°58.43'N   | 01:31:50                      | 15.0         | 284.1        | 302.1            | 04m37.9s       |
| 116°00.0'W | 40°07.46'N     | 37°05.22'N     | 38°35.87'N   | 01:32:24                      | 14.0         | 284.9        | 303.6            | 04m36.7s       |
| 115°00.0'W | 39°45.24'N     | 36°42.12'N     | 38°13.20'N   | 01:32:56                      | 13.0         | 285.6        | 305.1            | 04m35.6s       |
| 114°00.0'W | 39°22.90'N     | 36°18.92'N     | 37°50.43'N   | 01:33:26                      | 12.1         | 286.4        | 306.6            | 04m34.4s       |
| 113°00.0'W | 39°00.46'N     | 35°55.65'N     | 37°27.56'N   | 01:33:54                      | 11.1         | 287.1        | 308.0            | 04m33.3s       |
| 112°00.0'W | 38°37.92'N     | 35°32.32'N     | 37°04.62'N   | 01:34:19                      | 10.2         | 287.7        | 309.4            | 04m32.2s       |
| 111°00.0'W | 38°15.30'N     | 35°08.95'N     | 36°41.62'N   | 01:34:42                      | 9.2          | 288.4        | 310.8            | 04m31.1s       |
| 110°00.0'W | 37°52.63'N     | 34°45.55'N     | 36°18.57'N   | 01:35:02                      | 8.3          | 289.1        | 312.2            | 04m30.0s       |
| 109°00.0'W | 37°29.90'N     | 34°22.13'N     | 35°55.49'N   | 01:35:21                      | 7.3          | 289.7        | 313.5            | 04m28.9s       |
| 108°00.0'W | 37°07.13'N     | 33°58.71'N     | 35°32.38'N   | 01:35:37                      | 6.4          | 290.4        | 314.8            | 04m27.9s       |
| 107°00.0'W | 36°44.34'N     | 33°35.30'N     | 35°09.27'N   | 01:35:51                      | 5.4          | 291.0        | 316.1            | 04m26.9s       |
| 106°00.0'W | 36°21.55'N     | 33°11.90'N     | 34°46.17'N   | 01:36:02                      | 4.5          | 291.6        | 317.4            | 04m25.9s       |
| 105°00.0'W | 35°58.75'N     | 32°48.54'N     | 34°23.09'N   | 01:36:12                      | 3.6          | 292.2        | 318.6            | 04m24.9s       |
| 104°00.0'W | 35°35.97'N     | 32°25.23'N     | 34°00.03'N   | 01:36:19                      | 2.6          | 292.7        | 319.8            | 04m23.9s       |
| 103°00.0'W | 35°13.21'N     | 32°01.97'N     | 33°37.01'N   | 01:36:24                      | 1.7          | 293.3        | 321.0            | 04m23.0s       |
| 102°00.0'W | 34°50.49'N     | —              | 33°14.05'N   | 01:36:27                      | 0.8          | 293.9        | 322.2            | 04m22.0s       |