

Analemmatic Sundial

Latitude: 37.5° N/S

Earliest Sunrise: 4:37 a.m.    Latest Sunset: 7:23 p.m.  
 Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 608.8 mm  
 Sunrise/Sunset Markers: X = ± 603.8 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	608.8	608.8	0.0							
11:55	12:05	21.8	608.6	609.0	21.8	8:10	3:50	843.4	327.1	904.6	889.2
11:50	12:10	43.6	608.2	609.7	43.6	8:05	3:55	854.9	315.8	911.4	903.7
11:45	12:15	65.4	607.5	611.0	65.4	8:00	4:00	866.0	304.4	918.0	918.0
11:40	12:20	87.2	606.4	612.7	87.2	7:55	4:05	876.7	292.8	924.3	931.9
11:35	12:25	108.9	605.1	614.9	108.9	7:50	4:10	887.0	281.1	930.5	945.6
11:30	12:30	130.5	603.6	617.5	130.6	7:45	4:15	896.9	269.2	936.4	959.0
11:25	12:35	152.1	601.7	620.6	152.3	7:40	4:20	906.3	257.3	942.1	972.1
11:20	12:40	173.6	599.5	624.2	173.9	7:35	4:25	915.3	245.2	947.6	984.9
11:15	12:45	195.1	597.1	628.1	195.4	7:30	4:30	923.9	233.0	952.8	997.4
11:10	12:50	216.4	594.3	632.5	216.9	7:25	4:35	932.0	220.6	957.8	1009.6
11:05	12:55	237.7	591.3	637.3	238.3	7:20	4:40	939.7	208.2	962.5	1021.5
11:00	1:00	258.8	588.0	642.5	259.6	7:15	4:45	946.9	195.7	966.9	1033.1
10:55	1:05	279.8	584.4	648.0	280.9	7:10	4:50	953.7	183.1	971.1	1044.4
10:50	1:10	300.7	580.6	653.8	302.0	7:05	4:55	960.0	170.3	975.0	1055.4
10:45	1:15	321.4	576.5	660.0	323.1	7:00	5:00	965.9	157.6	978.7	1066.1
10:40	1:20	342.0	572.0	666.5	344.0	6:55	5:05	971.3	144.7	982.1	1076.5
10:35	1:25	362.4	567.4	673.3	364.8	6:50	5:10	976.3	131.8	985.1	1086.6
10:30	1:30	382.7	562.4	680.3	385.5	6:45	5:15	980.8	118.8	987.9	1096.4
10:25	1:35	402.7	557.2	687.5	406.0	6:40	5:20	984.8	105.7	990.5	1105.9
10:20	1:40	422.6	551.7	695.0	426.4	6:35	5:25	988.4	92.6	992.7	1115.0
10:15	1:45	442.3	546.0	702.6	446.7	6:30	5:30	991.4	79.5	994.6	1123.9
10:10	1:50	461.7	540.0	710.5	466.8	6:25	5:35	994.1	66.3	996.3	1132.4
10:05	1:55	481.0	533.7	718.5	486.8	6:20	5:40	996.2	53.1	997.6	1140.7
10:00	2:00	500.0	527.2	726.6	506.6	6:15	5:45	997.9	39.8	998.7	1148.7
9:55	2:05	518.8	520.4	734.8	526.2	6:10	5:50	999.0	26.6	999.4	1156.3
9:50	2:10	537.3	513.4	743.2	545.7	6:05	5:55	999.8	13.3	999.9	1163.7
9:45	2:15	555.6	506.2	751.6	565.0	6:00	6:00	1000.0	0.0	1000.0	1170.7
9:40	2:20	573.6	498.7	760.0	584.0	5:55	6:05	999.8	-13.3	999.9	1177.5
9:35	2:25	591.3	490.9	768.5	602.9	5:50	6:10	999.0	-26.6	999.4	1183.9
9:30	2:30	608.8	483.0	777.1	621.6	5:45	6:15	997.9	-39.8	998.7	1190.1
9:25	2:35	625.9	474.8	785.6	640.1	5:40	6:20	996.2	-53.1	997.6	1196.0
9:20	2:40	642.8	466.3	794.1	658.4	5:35	6:25	994.1	-66.3	996.3	1201.6
9:15	2:45	659.3	457.7	802.6	676.4	5:30	6:30	991.4	-79.5	994.6	1206.9
9:10	2:50	675.6	448.8	811.1	694.3	5:25	6:35	988.4	-92.6	992.7	1211.9
9:05	2:55	691.5	439.7	819.5	711.9	5:20	6:40	984.8	-105.7	990.5	1216.7
9:00	3:00	707.1	430.5	827.8	729.2	5:15	6:45	980.8	-118.8	987.9	1221.2
8:55	3:05	722.4	421.0	836.1	746.4	5:10	6:50	976.3	-131.8	985.1	1225.4
8:50	3:10	737.3	411.3	844.2	763.3	5:05	6:55	971.3	-144.7	982.1	1229.3
8:45	3:15	751.8	401.4	852.3	779.9	5:00	7:00	965.9	-157.6	978.7	1233.0
8:40	3:20	766.0	391.3	860.2	796.3	4:55	7:05	960.0	-170.3	975.0	1236.4
8:35	3:25	779.9	381.0	868.0	812.5	4:50	7:10	953.7	-183.1	971.1	1239.6
8:30	3:30	793.4	370.6	875.6	828.3	4:45	7:15	946.9	-195.7	966.9	1242.5
8:25	3:35	806.4	360.0	883.1	844.0	4:40	7:20	939.7	-208.2	962.5	1245.2
8:20	3:40	819.2	349.2	890.5	859.3	4:35	7:25	932.0	-220.6	957.8	1247.6
8:15	3:45	831.5	338.2	897.6	874.4	4:30	7:30	923.9	-233.0	952.8	1249.8

## Analemmatic Sundial

Latitude: 37.5° N/S

## Date Scale

Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 608.8 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-336.6	-330.2	-328.3	-319.6	-317.0	-306.1	-303.1	-290.2	-286.7	-272.1	-268.2
February	-243.5	-225.7	-221.1	-202.2	-197.5	-177.8	-172.7	-152.3	-147.2	-126.2	-120.8
March	-104.9	-83.4	-77.9	-56.2	-50.7	-28.8	-23.4	-1.4	4.0	25.9	31.3
April	63.8	85.2	90.5	111.5	116.7	137.3	142.3	162.4	167.3	186.7	191.3
May	214.4	232.0	236.2	252.6	256.6	271.6	275.2	288.9	292.2	304.2	306.9
June	321.8	329.6	331.4	337.1	338.4	342.0	342.5	343.8	344.0	341.5	342.7
July	338.4	333.0	331.4	324.1	322.0	312.5	310.0	298.7	295.7	282.8	279.4
August	257.5	241.5	237.4	220.3	216.0	198.0	193.3	174.4	169.6	150.0	145.0
September	114.7	94.0	88.8	67.7	62.4	41.2	35.9	14.4	9.0	-12.6	-18.0
October	-44.9	-66.5	-71.8	-93.2	-98.4	-119.6	-124.8	-145.5	-150.6	-170.8	-175.7
November	-204.7	-223.3	-227.8	-245.3	-249.5	-265.8	-269.6	-284.4	-287.8	-300.9	-304.1
December	-317.6	-326.8	-328.8	-335.5	-336.9	-341.2	-342.0	-343.8	-344.0	-343.2	-342.7

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	336.6	330.2	328.3	319.6	317.0	306.1	303.1	290.2	286.7	272.1	268.2
February	243.5	225.7	221.1	202.2	197.5	177.8	172.7	152.3	147.2	126.2	120.8
March	104.9	83.4	77.9	56.2	50.7	28.8	23.4	1.4	-4.0	-25.9	-31.3
April	-63.8	-85.2	-90.5	-111.5	-116.7	-137.3	-142.3	-162.4	-167.3	-186.7	-191.3
May	-214.4	-232.0	-236.2	-252.6	-256.6	-271.6	-275.2	-288.9	-292.2	-304.2	-306.9
June	-321.8	-329.6	-331.4	-337.1	-338.4	-342.0	-342.5	-343.8	-344.0	-341.5	-342.7
July	-338.4	-333.0	-331.4	-324.1	-322.0	-312.5	-310.0	-298.7	-295.7	-282.8	-279.4
August	-257.5	-241.5	-237.4	-220.3	-216.0	-198.0	-193.3	-174.4	-169.6	-150.0	-145.0
September	-114.7	-94.0	-88.8	-67.7	-62.4	-41.2	-35.9	-14.4	-9.0	12.6	18.0
October	44.9	66.5	71.8	93.2	98.4	119.6	124.8	145.5	150.6	170.8	175.7
November	204.7	223.3	227.8	245.3	249.5	265.8	269.6	284.4	287.8	300.9	304.1
December	317.6	326.8	328.8	335.5	336.9	341.2	342.0	343.8	344.0	343.2	342.7

Southern Hemisphere

The shaded "Date" boxes identify the two extremes of the "Date Scale" that occur on the Summer and Winter Solstices.

A number of "Date Scale" configurations are available including the following "Date Line" combinations:

a) 1

c) 1,10,20

e) 1,5,10,15,20,25

b) 1,15

d) 1,11,21

f) 1,6,11,16,21,26

## Analemmatic Sundial

Latitude: 37.5° N/S

Earliest Sunrise: 4:37 a.m.    Latest Sunset: 7:23 p.m.  
 Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 913.1 mm  
 Sunrise/Sunset Markers: X = ± 905.7 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	913.1	913.1	0.0							
11:55	12:05	32.7	912.9	913.5	32.7	8:10	3:50	1265.1	490.6	1356.9	1333.8
11:50	12:10	65.4	912.3	914.6	65.4	8:05	3:55	1282.4	473.7	1367.1	1355.6
11:45	12:15	98.1	911.2	916.5	98.1	8:00	4:00	1299.0	456.6	1376.9	1376.9
11:40	12:20	130.7	909.7	919.0	130.8	7:55	4:05	1315.1	439.2	1386.5	1397.9
11:35	12:25	163.3	907.7	922.3	163.4	7:50	4:10	1330.5	421.6	1395.7	1418.4
11:30	12:30	195.8	905.3	926.3	195.9	7:45	4:15	1345.3	403.9	1404.6	1438.5
11:25	12:35	228.2	902.5	930.9	228.4	7:40	4:20	1359.5	385.9	1413.2	1458.1
11:20	12:40	260.5	899.3	936.2	260.8	7:35	4:25	1373.0	367.8	1421.4	1477.3
11:15	12:45	292.6	895.6	942.2	293.2	7:30	4:30	1385.8	349.4	1429.2	1496.1
11:10	12:50	324.7	891.5	948.8	325.4	7:25	4:35	1398.0	331.0	1436.7	1514.4
11:05	12:55	356.5	887.0	955.9	357.5	7:20	4:40	1409.5	312.3	1443.7	1532.3
11:00	1:00	388.2	882.0	963.7	389.5	7:15	4:45	1420.4	293.5	1450.4	1549.7
10:55	1:05	419.7	876.7	972.0	421.3	7:10	4:50	1430.6	274.6	1456.7	1566.6
10:50	1:10	451.1	870.9	980.8	453.0	7:05	4:55	1440.1	255.5	1462.6	1583.1
10:45	1:15	482.2	864.7	990.0	484.6	7:00	5:00	1448.9	236.3	1468.0	1599.2
10:40	1:20	513.0	858.1	999.7	516.0	6:55	5:05	1457.0	217.0	1473.1	1614.8
10:35	1:25	543.7	851.1	1009.9	547.2	6:50	5:10	1464.4	197.6	1477.7	1629.9
10:30	1:30	574.0	843.6	1020.4	578.2	6:45	5:15	1471.2	178.1	1481.9	1644.6
10:25	1:35	604.1	835.8	1031.3	609.0	6:40	5:20	1477.2	158.6	1485.7	1658.8
10:20	1:40	633.9	827.6	1042.5	639.7	6:35	5:25	1482.5	138.9	1489.0	1672.5
10:15	1:45	663.4	819.0	1054.0	670.1	6:30	5:30	1487.2	119.2	1491.9	1685.8
10:10	1:50	692.6	810.0	1065.7	700.3	6:25	5:35	1491.1	99.4	1494.4	1698.7
10:05	1:55	721.5	800.6	1077.7	730.2	6:20	5:40	1494.3	79.6	1496.4	1711.1
10:00	2:00	750.0	790.8	1089.9	759.9	6:15	5:45	1496.8	59.7	1498.0	1723.0
9:55	2:05	778.2	780.7	1102.3	789.4	6:10	5:50	1498.6	39.8	1499.1	1734.5
9:50	2:10	805.9	770.1	1114.7	818.5	6:05	5:55	1499.6	19.9	1499.8	1745.5
9:45	2:15	833.4	759.2	1127.4	847.4	6:00	6:00	1500.0	0.0	1500.0	1756.1
9:40	2:20	860.4	748.0	1140.1	876.1	5:55	6:05	1499.6	-19.9	1499.8	1766.2
9:35	2:25	887.0	736.4	1152.8	904.4	5:50	6:10	1498.6	-39.8	1499.1	1775.9
9:30	2:30	913.1	724.4	1165.6	932.4	5:45	6:15	1496.8	-59.7	1498.0	1785.2
9:25	2:35	938.9	712.1	1178.4	960.2	5:40	6:20	1494.3	-79.6	1496.4	1794.0
9:20	2:40	964.2	699.5	1191.2	987.6	5:35	6:25	1491.1	-99.4	1494.4	1802.4
9:15	2:45	989.0	686.5	1203.9	1014.6	5:30	6:30	1487.2	-119.2	1491.9	1810.4
9:10	2:50	1013.4	673.2	1216.6	1041.4	5:25	6:35	1482.5	-138.9	1489.0	1817.9
9:05	2:55	1037.3	659.6	1229.2	1067.8	5:20	6:40	1477.2	-158.6	1485.7	1825.0
9:00	3:00	1060.7	645.7	1241.7	1093.9	5:15	6:45	1471.2	-178.1	1481.9	1831.7
8:55	3:05	1083.5	631.4	1254.1	1119.6	5:10	6:50	1464.4	-197.6	1477.7	1838.1
8:50	3:10	1105.9	616.9	1266.3	1144.9	5:05	6:55	1457.0	-217.0	1473.1	1844.0
8:45	3:15	1127.8	602.1	1278.4	1169.9	5:00	7:00	1448.9	-236.3	1468.0	1849.5
8:40	3:20	1149.1	587.0	1290.3	1194.5	4:55	7:05	1440.1	-255.5	1462.6	1854.6
8:35	3:25	1169.8	571.6	1302.0	1218.7	4:50	7:10	1430.6	-274.6	1456.7	1859.4
8:30	3:30	1190.0	555.9	1313.5	1242.5	4:45	7:15	1420.4	-293.5	1450.4	1863.7
8:25	3:35	1209.7	539.9	1324.7	1265.9	4:40	7:20	1409.5	-312.3	1443.7	1867.8
8:20	3:40	1228.7	523.8	1335.7	1289.0	4:35	7:25	1398.0	-331.0	1436.7	1871.4
8:15	3:45	1247.2	507.3	1346.4	1311.6	4:30	7:30	1385.8	-349.4	1429.2	1874.7

## Analemmatic Sundial

Latitude: 37.5° N/S

## Date Scale

Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 913.1 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-504.9	-495.4	-492.4	-479.4	-475.5	-459.2	-454.7	-435.3	-430.1	-408.1	-402.3
February	-365.2	-338.5	-331.6	-303.3	-296.3	-266.7	-259.0	-228.5	-220.8	-189.3	-181.3
March	-157.3	-125.1	-116.9	-84.3	-76.1	-43.2	-35.1	-2.1	6.0	38.9	47.0
April	95.7	127.8	135.8	167.2	175.1	206.0	213.5	243.6	251.0	280.0	287.0
May	321.5	348.0	354.3	378.9	384.8	407.4	412.8	433.4	438.3	456.3	460.4
June	482.7	494.4	497.1	505.6	507.6	513.0	513.7	515.7	516.0	512.3	514.0
July	507.6	499.5	497.1	486.1	483.0	468.8	464.9	448.0	443.5	424.2	419.1
August	386.2	362.2	356.1	330.5	324.0	296.9	289.9	261.6	254.5	225.1	217.6
September	172.1	141.1	133.3	101.6	93.7	61.7	53.8	21.6	13.5	-18.9	-27.0
October	-67.4	-99.7	-107.7	-139.8	-147.6	-179.3	-187.2	-218.2	-225.9	-256.2	-263.6
November	-307.1	-335.0	-341.7	-367.9	-374.3	-398.6	-404.4	-426.6	-431.7	-451.3	-456.1
December	-476.5	-490.3	-493.2	-503.2	-505.4	-511.8	-513.0	-515.7	-516.0	-514.7	-514.0

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	504.9	495.4	492.4	479.4	475.5	459.2	454.7	435.3	430.1	408.1	402.3
February	365.2	338.5	331.6	303.3	296.3	266.7	259.0	228.5	220.8	189.3	181.3
March	157.3	125.1	116.9	84.3	76.1	43.2	35.1	2.1	-6.0	-38.9	-47.0
April	-95.7	-127.8	-135.8	-167.2	-175.1	-206.0	-213.5	-243.6	-251.0	-280.0	-287.0
May	-321.5	-348.0	-354.3	-378.9	-384.8	-407.4	-412.8	-433.4	-438.3	-456.3	-460.4
June	-482.7	-494.4	-497.1	-505.6	-507.6	-513.0	-513.7	-515.7	-516.0	-512.3	-514.0
July	-507.6	-499.5	-497.1	-486.1	-483.0	-468.8	-464.9	-448.0	-443.5	-424.2	-419.1
August	-386.2	-362.2	-356.1	-330.5	-324.0	-296.9	-289.9	-261.6	-254.5	-225.1	-217.6
September	-172.1	-141.1	-133.3	-101.6	-93.7	-61.7	-53.8	-21.6	-13.5	18.9	27.0
October	67.4	99.7	107.7	139.8	147.6	179.3	187.2	218.2	225.9	256.2	263.6
November	307.1	335.0	341.7	367.9	374.3	398.6	404.4	426.6	431.7	451.3	456.1
December	476.5	490.3	493.2	503.2	505.4	511.8	513.0	515.7	516.0	514.7	514.0

Southern Hemisphere

The shaded "Date" boxes identify the two extremes of the "Date Scale" that occur on the Summer and Winter Solstices.

A number of "Date Scale" configurations are available including the following "Date Line" combinations:

- |         |            |                    |
|---------|------------|--------------------|
| a) 1    | c) 1,10,20 | e) 1,5,10,15,20,25 |
| b) 1,15 | d) 1,11,21 | f) 1,6,11,16,21,26 |

Analemmatic Sundial

Latitude: 37.5° N/S

Earliest Sunrise: 4:37 a.m. Latest Sunset: 7:23 p.m.  
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1217.5 mm  
 Sunrise/Sunset Markers: X = ± 1207.6 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	1217.5	1217.5	0.0							
11:55	12:05	43.6	1217.2	1218.0	43.6	8:10	3:50	1686.8	654.2	1809.2	1778.4
11:50	12:10	87.2	1216.4	1219.5	87.2	8:05	3:55	1709.8	631.6	1822.8	1807.4
11:45	12:15	130.8	1214.9	1221.9	130.8	8:00	4:00	1732.1	608.8	1835.9	1835.9
11:40	12:20	174.3	1212.9	1225.4	174.4	7:55	4:05	1753.5	585.6	1848.7	1863.8
11:35	12:25	217.7	1210.3	1229.7	217.9	7:50	4:10	1774.0	562.2	1861.0	1891.2
11:30	12:30	261.1	1207.1	1235.0	261.3	7:45	4:15	1793.7	538.5	1872.8	1918.0
11:25	12:35	304.2	1203.4	1241.2	304.6	7:40	4:20	1812.6	514.5	1884.2	1944.2
11:20	12:40	347.3	1199.0	1248.3	347.8	7:35	4:25	1830.6	490.4	1895.2	1969.8
11:15	12:45	390.2	1194.1	1256.3	390.9	7:30	4:30	1847.8	465.9	1905.6	1994.8
11:10	12:50	432.9	1188.7	1265.0	433.8	7:25	4:35	1864.0	441.3	1915.5	2019.2
11:05	12:55	475.4	1182.6	1274.6	476.7	7:20	4:40	1879.4	416.4	1925.0	2043.0
11:00	1:00	517.6	1176.0	1284.9	519.3	7:15	4:45	1893.9	391.4	1933.9	2066.2
10:55	1:05	559.7	1168.9	1296.0	561.8	7:10	4:50	1907.4	366.1	1942.3	2088.8
10:50	1:10	601.4	1161.2	1307.7	604.0	7:05	4:55	1920.1	340.7	1950.1	2110.8
10:45	1:15	642.9	1152.9	1320.0	646.1	7:00	5:00	1931.9	315.1	1957.4	2132.2
10:40	1:20	684.0	1144.1	1333.0	688.0	6:55	5:05	1942.7	289.4	1964.1	2153.0
10:35	1:25	724.9	1134.7	1346.5	729.6	6:50	5:10	1952.6	263.5	1970.3	2173.2
10:30	1:30	765.4	1124.8	1360.5	771.0	6:45	5:15	1961.6	237.5	1975.9	2192.7
10:25	1:35	805.5	1114.4	1375.0	812.1	6:40	5:20	1969.6	211.4	1980.9	2211.7
10:20	1:40	845.2	1103.5	1390.0	852.9	6:35	5:25	1976.7	185.2	1985.4	2230.0
10:15	1:45	884.6	1092.0	1405.3	893.4	6:30	5:30	1982.9	158.9	1989.2	2247.8
10:10	1:50	923.5	1080.0	1421.0	933.7	6:25	5:35	1988.1	132.5	1992.5	2264.9
10:05	1:55	962.0	1067.4	1436.9	973.6	6:20	5:40	1992.4	106.1	1995.2	2281.4
10:00	2:00	1000.0	1054.4	1453.2	1013.2	6:15	5:45	1995.7	79.6	1997.3	2297.3
9:55	2:05	1037.5	1040.9	1469.7	1052.5	6:10	5:50	1998.1	53.1	1998.8	2312.6
9:50	2:10	1074.6	1026.8	1486.3	1091.4	6:05	5:55	1999.5	26.6	1999.7	2327.3
9:45	2:15	1111.1	1012.3	1503.1	1129.9	6:00	6:00	2000.0	0.0	2000.0	2341.4
9:40	2:20	1147.2	997.3	1520.1	1168.1	5:55	6:05	1999.5	-26.6	1999.7	2355.0
9:35	2:25	1182.6	981.9	1537.1	1205.9	5:50	6:10	1998.1	-53.1	1998.8	2367.9
9:30	2:30	1217.5	965.9	1554.1	1243.2	5:45	6:15	1995.7	-79.6	1997.3	2380.2
9:25	2:35	1251.8	949.5	1571.2	1280.2	5:40	6:20	1992.4	-106.1	1995.2	2392.0
9:20	2:40	1285.6	932.7	1588.3	1316.8	5:35	6:25	1988.1	-132.5	1992.5	2403.2
9:15	2:45	1318.7	915.4	1605.3	1352.9	5:30	6:30	1982.9	-158.9	1989.2	2413.8
9:10	2:50	1351.2	897.7	1622.2	1388.5	5:25	6:35	1976.7	-185.2	1985.4	2423.9
9:05	2:55	1383.0	879.5	1639.0	1423.7	5:20	6:40	1969.6	-211.4	1980.9	2433.4
9:00	3:00	1414.2	860.9	1655.7	1458.5	5:15	6:45	1961.6	-237.5	1975.9	2442.3
8:55	3:05	1444.7	841.9	1672.2	1492.8	5:10	6:50	1952.6	-263.5	1970.3	2450.7
8:50	3:10	1474.6	822.5	1688.5	1526.5	5:05	6:55	1942.7	-289.4	1964.1	2458.6
8:45	3:15	1503.7	802.8	1704.5	1559.8	5:00	7:00	1931.9	-315.1	1957.4	2466.0
8:40	3:20	1532.1	782.6	1720.4	1592.6	4:55	7:05	1920.1	-340.7	1950.1	2472.8
8:35	3:25	1559.8	762.1	1736.0	1624.9	4:50	7:10	1907.4	-366.1	1942.3	2479.2
8:30	3:30	1586.7	741.2	1751.3	1656.7	4:45	7:15	1893.9	-391.4	1933.9	2485.0
8:25	3:35	1612.9	719.9	1766.3	1687.9	4:40	7:20	1879.4	-416.4	1925.0	2490.4
8:20	3:40	1638.3	698.3	1780.9	1718.6	4:35	7:25	1864.0	-441.3	1915.5	2495.2
8:15	3:45	1662.9	676.4	1795.2	1748.8	4:30	7:30	1847.8	-465.9	1905.6	2499.6

## Analemmatic Sundial

Latitude: 37.5° N/S

## Date Scale

Semi-Major Axis (E-W): 2000 mm    Semi-Minor Axis (N-S): 1217.5 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-673.2	-660.5	-656.6	-639.1	-634.0	-612.3	-606.2	-580.3	-573.4	-544.2	-536.5
February	-486.9	-451.4	-442.1	-404.4	-395.0	-355.5	-345.4	-304.7	-294.4	-252.4	-241.7
March	-209.7	-166.8	-155.9	-112.3	-101.5	-57.6	-46.8	-2.8	8.0	51.8	62.6
April	127.7	170.4	181.1	223.0	233.5	274.6	284.6	324.8	334.7	373.3	382.7
May	428.7	464.0	472.4	505.2	513.1	543.3	550.4	577.8	584.4	608.4	613.9
June	643.6	659.2	662.8	674.2	676.8	684.0	685.0	687.6	687.9	683.0	685.3
July	676.8	666.0	662.8	648.2	644.0	625.0	619.9	597.4	591.4	565.6	558.8
August	514.9	483.0	474.8	440.6	432.0	395.9	386.5	348.9	339.3	300.1	290.1
September	229.5	188.1	177.7	135.5	124.9	82.3	71.8	28.8	18.0	-25.2	-36.0
October	-89.8	-133.0	-143.6	-186.4	-196.8	-239.1	-249.6	-290.9	-301.2	-341.6	-351.5
November	-409.5	-446.6	-455.6	-490.6	-499.1	-531.5	-539.2	-568.7	-575.6	-601.8	-608.1
December	-635.3	-653.7	-657.6	-670.9	-673.8	-682.4	-684.0	-687.6	-687.9	-686.3	-685.3

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	673.2	660.5	656.6	639.1	634.0	612.3	606.2	580.3	573.4	544.2	536.5
February	486.9	451.4	442.1	404.4	395.0	355.5	345.4	304.7	294.4	252.4	241.7
March	209.7	166.8	155.9	112.3	101.5	57.6	46.8	2.8	-8.0	-51.8	-62.6
April	-127.7	-170.4	-181.1	-223.0	-233.5	-274.6	-284.6	-324.8	-334.7	-373.3	-382.7
May	-428.7	-464.0	-472.4	-505.2	-513.1	-543.3	-550.4	-577.8	-584.4	-608.4	-613.9
June	-643.6	-659.2	-662.8	-674.2	-676.8	-684.0	-685.0	-687.6	-687.9	-683.0	-685.3
July	-676.8	-666.0	-662.8	-648.2	-644.0	-625.0	-619.9	-597.4	-591.4	-565.6	-558.8
August	-514.9	-483.0	-474.8	-440.6	-432.0	-395.9	-386.5	-348.9	-339.3	-300.1	-290.1
September	-229.5	-188.1	-177.7	-135.5	-124.9	-82.3	-71.8	-28.8	-18.0	25.2	36.0
October	89.8	133.0	143.6	186.4	196.8	239.1	249.6	290.9	301.2	341.6	351.5
November	409.5	446.6	455.6	490.6	499.1	531.5	539.2	568.7	575.6	601.8	608.1
December	635.3	653.7	657.6	670.9	673.8	682.4	684.0	687.6	687.9	686.3	685.3

Southern Hemisphere

The shaded "Date" boxes identify the two extremes of the "Date Scale" that occur on the Summer and Winter Solstices.

A number of "Date Scale" configurations are available including the following "Date Line" combinations:

- |         |            |                    |
|---------|------------|--------------------|
| a) 1    | c) 1,10,20 | e) 1,5,10,15,20,25 |
| b) 1,15 | d) 1,11,21 | f) 1,6,11,16,21,26 |

## Analemmatic Sundial

Latitude: 37.5° N/S

Earliest Sunrise: 4:37 a.m.    Latest Sunset: 7:23 p.m.  
 Semi-Major Axis (E-W): 2500 mm    Semi-Minor Axis (N-S): 1521.9 mm  
 Sunrise/Sunset Markers: X = ± 1509.5 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	1521.9	1521.9	0.0							
11:55	12:05	54.5	1521.5	1522.5	54.5	8:10	3:50	2108.5	817.7	2261.5	2223.0
11:50	12:10	109.0	1520.5	1524.4	109.1	8:05	3:55	2137.3	789.5	2278.4	2259.3
11:45	12:15	163.5	1518.6	1527.4	163.5	8:00	4:00	2165.1	761.0	2294.9	2294.9
11:40	12:20	217.9	1516.1	1531.7	218.0	7:55	4:05	2191.8	732.0	2310.8	2329.8
11:35	12:25	272.2	1512.9	1537.1	272.3	7:50	4:10	2217.5	702.7	2326.2	2364.0
11:30	12:30	326.3	1508.9	1543.8	326.6	7:45	4:15	2242.2	673.1	2341.0	2397.5
11:25	12:35	380.3	1504.2	1551.5	380.7	7:40	4:20	2265.8	643.2	2355.3	2430.2
11:20	12:40	434.1	1498.8	1560.4	434.7	7:35	4:25	2288.3	612.9	2368.9	2462.2
11:15	12:45	487.7	1492.7	1570.3	488.6	7:30	4:30	2309.7	582.4	2382.0	2493.5
11:10	12:50	541.1	1485.8	1581.3	542.3	7:25	4:35	2330.0	551.6	2394.4	2524.0
11:05	12:55	594.2	1478.3	1593.2	595.8	7:20	4:40	2349.2	520.5	2406.2	2553.8
11:00	1:00	647.0	1470.0	1606.1	649.1	7:15	4:45	2367.3	489.2	2417.3	2582.8
10:55	1:05	699.6	1461.1	1619.9	702.2	7:10	4:50	2384.3	457.6	2427.8	2611.0
10:50	1:10	751.8	1451.5	1634.6	755.1	7:05	4:55	2400.1	425.9	2437.6	2638.5
10:45	1:15	803.6	1441.1	1650.0	807.6	7:00	5:00	2414.8	393.9	2446.7	2665.3
10:40	1:20	855.1	1430.1	1666.2	860.0	6:55	5:05	2428.4	361.7	2455.1	2691.3
10:35	1:25	906.1	1418.4	1683.1	912.0	6:50	5:10	2440.7	329.4	2462.9	2716.5
10:30	1:30	956.7	1406.1	1700.7	963.7	6:45	5:15	2452.0	296.9	2469.9	2740.9
10:25	1:35	1006.9	1393.0	1718.8	1015.1	6:40	5:20	2462.0	264.3	2476.2	2764.6
10:20	1:40	1056.5	1379.3	1737.5	1066.1	6:35	5:25	2470.9	231.5	2481.7	2787.6
10:15	1:45	1105.7	1365.0	1756.6	1116.8	6:30	5:30	2478.6	198.6	2486.6	2809.7
10:10	1:50	1154.4	1349.9	1776.2	1167.1	6:25	5:35	2485.1	165.7	2490.7	2831.1
10:05	1:55	1202.5	1334.3	1796.2	1217.0	6:20	5:40	2490.5	132.6	2494.0	2851.8
10:00	2:00	1250.0	1318.0	1816.5	1266.5	6:15	5:45	2494.6	99.5	2496.6	2871.7
9:55	2:05	1296.9	1301.1	1837.1	1315.6	6:10	5:50	2497.6	66.4	2498.5	2890.8
9:50	2:10	1343.2	1283.6	1857.9	1364.2	6:05	5:55	2499.4	33.2	2499.6	2909.2
9:45	2:15	1388.9	1265.4	1878.9	1412.4	6:00	6:00	2500.0	0.0	2500.0	2926.8
9:40	2:20	1433.9	1246.7	1900.1	1460.1	5:55	6:05	2499.4	-33.2	2499.6	2943.7
9:35	2:25	1478.3	1227.3	1921.4	1507.3	5:50	6:10	2497.6	-66.4	2498.5	2959.9
9:30	2:30	1521.9	1207.4	1942.7	1554.1	5:45	6:15	2494.6	-99.5	2496.6	2975.3
9:25	2:35	1564.8	1186.9	1964.0	1600.3	5:40	6:20	2490.5	-132.6	2494.0	2990.0
9:20	2:40	1607.0	1165.8	1985.3	1645.9	5:35	6:25	2485.1	-165.7	2490.7	3004.0
9:15	2:45	1648.4	1144.2	2006.6	1691.1	5:30	6:30	2478.6	-198.6	2486.6	3017.3
9:10	2:50	1689.0	1122.1	2027.7	1735.7	5:25	6:35	2470.9	-231.5	2481.7	3029.8
9:05	2:55	1728.8	1099.4	2048.7	1779.7	5:20	6:40	2462.0	-264.3	2476.2	3041.7
9:00	3:00	1767.8	1076.1	2069.6	1823.1	5:15	6:45	2452.0	-296.9	2469.9	3052.9
8:55	3:05	1805.9	1052.4	2090.2	1865.9	5:10	6:50	2440.7	-329.4	2462.9	3063.4
8:50	3:10	1843.2	1028.2	2110.6	1908.2	5:05	6:55	2428.4	-361.7	2455.1	3073.3
8:45	3:15	1879.6	1003.5	2130.7	1949.8	5:00	7:00	2414.8	-393.9	2446.7	3082.5
8:40	3:20	1915.1	978.3	2150.5	1990.8	4:55	7:05	2400.1	-425.9	2437.6	3091.0
8:35	3:25	1949.7	952.6	2170.0	2031.1	4:50	7:10	2384.3	-457.6	2427.8	3098.9
8:30	3:30	1983.4	926.5	2189.1	2070.8	4:45	7:15	2367.3	-489.2	2417.3	3106.2
8:25	3:35	2016.1	899.9	2207.8	2109.9	4:40	7:20	2349.2	-520.5	2406.2	3112.9
8:20	3:40	2047.9	872.9	2226.2	2148.3	4:35	7:25	2330.0	-551.6	2394.4	3119.0
8:15	3:45	2078.7	845.5	2244.1	2185.9	4:30	7:30	2309.7	-582.4	2382.0	3124.6

## Analemmatic Sundial

Latitude: 37.5° N/S

## Date Scale

Semi-Major Axis (E-W): 2500 mm    Semi-Minor Axis (N-S): 1521.9 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-841.5	-825.6	-820.7	-798.9	-792.5	-765.3	-757.8	-725.4	-716.8	-680.2	-670.6
February	-608.7	-564.2	-552.7	-505.6	-493.8	-444.4	-431.7	-380.9	-368.0	-315.6	-302.1
March	-262.2	-208.5	-194.8	-140.4	-126.9	-72.0	-58.5	-3.5	10.0	64.8	78.3
April	159.6	213.0	226.3	278.7	291.8	343.3	355.8	406.0	418.3	466.7	478.4
May	535.9	580.0	590.5	631.5	641.4	679.1	688.0	722.3	730.5	760.6	767.3
June	804.6	824.0	828.4	842.7	846.0	855.0	856.2	859.5	859.9	853.8	856.6
July	846.0	832.5	828.4	810.2	805.0	781.3	774.9	746.7	739.2	707.0	698.5
August	643.7	603.7	593.5	550.8	540.0	494.9	483.1	436.1	424.1	375.1	362.6
September	286.9	235.1	222.1	169.3	156.1	102.9	89.7	36.0	22.5	-31.5	-45.0
October	-112.3	-166.2	-179.5	-233.0	-246.0	-298.9	-312.0	-363.7	-376.6	-427.0	-439.3
November	-511.8	-558.3	-569.5	-613.2	-623.8	-664.4	-674.0	-710.9	-719.5	-752.2	-760.2
December	-794.1	-817.1	-821.9	-838.6	-842.3	-852.9	-855.0	-859.5	-859.9	-857.9	-856.6

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	841.5	825.6	820.7	798.9	792.5	765.3	757.8	725.4	716.8	680.2	670.6
February	608.7	564.2	552.7	505.6	493.8	444.4	431.7	380.9	368.0	315.6	302.1
March	262.2	208.5	194.8	140.4	126.9	72.0	58.5	3.5	-10.0	-64.8	-78.3
April	-159.6	-213.0	-226.3	-278.7	-291.8	-343.3	-355.8	-406.0	-418.3	-466.7	-478.4
May	-535.9	-580.0	-590.5	-631.5	-641.4	-679.1	-688.0	-722.3	-730.5	-760.6	-767.3
June	-804.6	-824.0	-828.4	-842.7	-846.0	-855.0	-856.2	-859.5	-859.9	-853.8	-856.6
July	-846.0	-832.5	-828.4	-810.2	-805.0	-781.3	-774.9	-746.7	-739.2	-707.0	-698.5
August	-643.7	-603.7	-593.5	-550.8	-540.0	-494.9	-483.1	-436.1	-424.1	-375.1	-362.6
September	-286.9	-235.1	-222.1	-169.3	-156.1	-102.9	-89.7	-36.0	-22.5	31.5	45.0
October	112.3	166.2	179.5	233.0	246.0	298.9	312.0	363.7	376.6	427.0	439.3
November	511.8	558.3	569.5	613.2	623.8	664.4	674.0	710.9	719.5	752.2	760.2
December	794.1	817.1	821.9	838.6	842.3	852.9	855.0	859.5	859.9	857.9	856.6

Southern Hemisphere

The shaded "Date" boxes identify the two extremes of the "Date Scale" that occur on the Summer and Winter Solstices.

A number of "Date Scale" configurations are available including the following "Date Line" combinations:

- |         |            |                    |
|---------|------------|--------------------|
| a) 1    | c) 1,10,20 | e) 1,5,10,15,20,25 |
| b) 1,15 | d) 1,11,21 | f) 1,6,11,16,21,26 |