

Analemmatic Sundial

Latitude: 33.0° N/S

Earliest Sunrise: 4:50 a.m. Latest Sunset: 7:10 p.m.
 Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 544.6 mm
 Sunrise/Sunset Markers: X = ± 683.0 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	544.6	544.6	0.0							
11:55	12:05	21.8	544.5	544.9	21.8	8:10	3:50	843.4	292.6	892.7	880.2
11:50	12:10	43.6	544.1	545.9	43.6	8:05	3:55	854.9	282.5	900.4	894.2
11:45	12:15	65.4	543.5	547.4	65.4	8:00	4:00	866.0	272.3	907.8	907.8
11:40	12:20	87.2	542.6	549.5	87.2	7:55	4:05	876.7	262.0	915.0	921.2
11:35	12:25	108.9	541.4	552.2	108.9	7:50	4:10	887.0	251.5	922.0	934.2
11:30	12:30	130.5	540.0	555.5	130.6	7:45	4:15	896.9	240.9	928.7	946.9
11:25	12:35	152.1	538.3	559.4	152.3	7:40	4:20	906.3	230.2	935.1	959.3
11:20	12:40	173.6	536.4	563.8	173.8	7:35	4:25	915.3	219.4	941.2	971.4
11:15	12:45	195.1	534.2	568.7	195.4	7:30	4:30	923.9	208.4	947.1	983.2
11:10	12:50	216.4	531.7	574.1	216.8	7:25	4:35	932.0	197.4	952.7	994.6
11:05	12:55	237.7	529.0	580.0	238.2	7:20	4:40	939.7	186.3	958.0	1005.7
11:00	1:00	258.8	526.1	586.3	259.5	7:15	4:45	946.9	175.1	963.0	1016.5
10:55	1:05	279.8	522.9	593.1	280.7	7:10	4:50	953.7	163.8	967.7	1027.0
10:50	1:10	300.7	519.4	600.2	301.8	7:05	4:55	960.0	152.4	972.1	1037.1
10:45	1:15	321.4	515.7	607.7	322.7	7:00	5:00	965.9	141.0	976.2	1046.9
10:40	1:20	342.0	511.8	615.6	343.6	6:55	5:05	971.3	129.5	979.9	1056.4
10:35	1:25	362.4	507.6	623.7	364.3	6:50	5:10	976.3	117.9	983.4	1065.5
10:30	1:30	382.7	503.2	632.2	384.9	6:45	5:15	980.8	106.3	986.5	1074.3
10:25	1:35	402.7	498.5	640.9	405.4	6:40	5:20	984.8	94.6	989.3	1082.8
10:20	1:40	422.6	493.6	649.8	425.7	6:35	5:25	988.4	82.9	991.8	1090.9
10:15	1:45	442.3	488.5	659.0	445.8	6:30	5:30	991.4	71.1	994.0	1098.7
10:10	1:50	461.7	483.1	668.3	465.8	6:25	5:35	994.1	59.3	995.8	1106.2
10:05	1:55	481.0	477.5	677.8	485.7	6:20	5:40	996.2	47.5	997.3	1113.4
10:00	2:00	500.0	471.7	687.4	505.3	6:15	5:45	997.9	35.6	998.5	1120.2
9:55	2:05	518.8	465.6	697.1	524.8	6:10	5:50	999.0	23.8	999.3	1126.7
9:50	2:10	537.3	459.3	706.9	544.0	6:05	5:55	999.8	11.9	999.8	1132.9
9:45	2:15	555.6	452.9	716.8	563.1	6:00	6:00	1000.0	0.0	1000.0	1138.7
9:40	2:20	573.6	446.1	726.7	582.0	5:55	6:05	999.8	-11.9	999.8	1144.2
9:35	2:25	591.3	439.2	736.6	600.6	5:50	6:10	999.0	-23.8	999.3	1149.4
9:30	2:30	608.8	432.1	746.5	619.1	5:45	6:15	997.9	-35.6	998.5	1154.3
9:25	2:35	625.9	424.8	756.4	637.3	5:40	6:20	996.2	-47.5	997.3	1158.9
9:20	2:40	642.8	417.2	766.3	655.3	5:35	6:25	994.1	-59.3	995.8	1163.1
9:15	2:45	659.3	409.5	776.2	673.1	5:30	6:30	991.4	-71.1	994.0	1167.1
9:10	2:50	675.6	401.6	785.9	690.6	5:25	6:35	988.4	-82.9	991.8	1170.7
9:05	2:55	691.5	393.4	795.6	707.9	5:20	6:40	984.8	-94.6	989.3	1174.1
9:00	3:00	707.1	385.1	805.2	724.9	5:15	6:45	980.8	-106.3	986.5	1177.1
8:55	3:05	722.4	376.6	814.7	741.6	5:10	6:50	976.3	-117.9	983.4	1179.9
8:50	3:10	737.3	368.0	824.0	758.2	5:05	6:55	971.3	-129.5	979.9	1182.3
8:45	3:15	751.8	359.1	833.2	774.4	5:00	7:00	965.9	-141.0	976.2	1184.5
8:40	3:20	766.0	350.1	842.3	790.4	4:55	7:05	960.0	-152.4	972.1	1186.4
8:35	3:25	779.9	340.9	851.1	806.1	4:50	7:10	953.7	-163.8	967.7	1188.0
8:30	3:30	793.4	331.6	859.8	821.5	4:45	7:15	946.9	-175.1	963.0	1189.4
8:25	3:35	806.4	322.1	868.4	836.6						
8:20	3:40	819.2	312.4	876.7	851.4						
8:15	3:45	831.5	302.6	884.8	866.0						

Analematic Sundial

Latitude: 33.0° N/S

Date Scale

Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 544.6 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-355.8	-349.1	-347.0	-337.8	-335.1	-323.6	-320.4	-306.7	-303.1	-287.6	-283.5
February	-257.4	-238.6	-233.7	-213.8	-208.8	-187.9	-182.6	-161.0	-155.6	-133.4	-127.7
March	-110.9	-88.1	-82.4	-59.4	-53.6	-30.5	-24.7	-1.5	4.2	27.4	33.1
April	67.5	90.1	95.7	117.9	123.4	145.2	150.4	171.7	176.9	197.3	202.3
May	226.6	245.2	249.7	267.0	271.2	287.1	290.9	305.4	308.9	321.6	324.5
June	340.2	348.4	350.3	356.3	357.7	361.5	362.1	363.4	363.6	361.0	362.2
July	357.7	352.0	350.3	342.6	340.4	330.4	327.7	315.7	312.6	299.0	295.3
August	272.2	255.3	251.0	232.9	228.3	209.3	204.3	184.4	179.3	158.6	153.3
September	121.3	99.4	93.9	71.6	66.0	43.5	37.9	15.2	9.5	-13.3	-19.0
October	-47.5	-70.3	-75.9	-98.5	-104.0	-126.4	-131.9	-153.8	-159.2	-180.6	-185.8
November	-216.4	-236.1	-240.8	-259.3	-263.8	-280.9	-285.0	-300.6	-304.3	-318.1	-321.4
December	-335.8	-345.5	-347.6	-354.6	-356.2	-360.7	-361.5	-363.4	-363.6	-362.8	-362.2

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	355.8	349.1	347.0	337.8	335.1	323.6	320.4	306.7	303.1	287.6	283.5
February	257.4	238.6	233.7	213.8	208.8	187.9	182.6	161.0	155.6	133.4	127.7
March	110.9	88.1	82.4	59.4	53.6	30.5	24.7	1.5	-4.2	-27.4	-33.1
April	-67.5	-90.1	-95.7	-117.9	-123.4	-145.2	-150.4	-171.7	-176.9	-197.3	-202.3
May	-226.6	-245.2	-249.7	-267.0	-271.2	-287.1	-290.9	-305.4	-308.9	-321.6	-324.5
June	-340.2	-348.4	-350.3	-356.3	-357.7	-361.5	-362.1	-363.4	-363.6	-361.0	-362.2
July	-357.7	-352.0	-350.3	-342.6	-340.4	-330.4	-327.7	-315.7	-312.6	-299.0	-295.3
August	-272.2	-255.3	-251.0	-232.9	-228.3	-209.3	-204.3	-184.4	-179.3	-158.6	-153.3
September	-121.3	-99.4	-93.9	-71.6	-66.0	-43.5	-37.9	-15.2	-9.5	13.3	19.0
October	47.5	70.3	75.9	98.5	104.0	126.4	131.9	153.8	159.2	180.6	185.8
November	216.4	236.1	240.8	259.3	263.8	280.9	285.0	300.6	304.3	318.1	321.4
December	335.8	345.5	347.6	354.6	356.2	360.7	361.5	363.4	363.6	362.8	362.2

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: 33.0° N/S

Earliest Sunrise: 4:50 a.m. Latest Sunset: 7:10 p.m.
 Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 817.0 mm
 Sunrise/Sunset Markers: X = ± 1024.5 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	817.0	817.0	0.0							
11:55	12:05	32.7	816.8	817.4	32.7	8:10	3:50	1265.1	439.0	1339.1	1320.4
11:50	12:10	65.4	816.2	818.8	65.4	8:05	3:55	1282.4	423.8	1350.6	1341.3
11:45	12:15	98.1	815.2	821.1	98.1	8:00	4:00	1299.0	408.5	1361.7	1361.7
11:40	12:20	130.7	813.8	824.3	130.8	7:55	4:05	1315.1	392.9	1372.5	1381.8
11:35	12:25	163.3	812.1	828.4	163.4	7:50	4:10	1330.5	377.2	1383.0	1401.3
11:30	12:30	195.8	810.0	833.3	195.9	7:45	4:15	1345.3	361.3	1393.0	1420.4
11:25	12:35	228.2	807.5	839.1	228.4	7:40	4:20	1359.5	345.3	1402.6	1439.0
11:20	12:40	260.5	804.5	845.7	260.8	7:35	4:25	1373.0	329.0	1411.8	1457.1
11:15	12:45	292.6	801.3	853.0	293.1	7:30	4:30	1385.8	312.6	1420.6	1474.7
11:10	12:50	324.7	797.6	861.1	325.2	7:25	4:35	1398.0	296.1	1429.0	1491.9
11:05	12:55	356.5	793.5	870.0	357.3	7:20	4:40	1409.5	279.4	1437.0	1508.6
11:00	1:00	388.2	789.1	879.5	389.2	7:15	4:45	1420.4	262.6	1444.5	1524.7
10:55	1:05	419.7	784.3	889.6	421.0	7:10	4:50	1430.6	245.7	1451.5	1540.4
10:50	1:10	451.1	779.1	900.3	452.6	7:05	4:55	1440.1	228.6	1458.1	1555.6
10:45	1:15	482.2	773.6	911.6	484.1	7:00	5:00	1448.9	211.4	1464.2	1570.3
10:40	1:20	513.0	767.7	923.3	515.4	6:55	5:05	1457.0	194.2	1469.9	1584.5
10:35	1:25	543.7	761.4	935.6	546.5	6:50	5:10	1464.4	176.8	1475.1	1598.2
10:30	1:30	574.0	754.8	948.3	577.4	6:45	5:15	1471.2	159.4	1479.8	1611.5
10:25	1:35	604.1	747.8	961.3	608.1	6:40	5:20	1477.2	141.9	1484.0	1624.2
10:20	1:40	633.9	740.4	974.7	638.5	6:35	5:25	1482.5	124.3	1487.7	1636.4
10:15	1:45	663.4	732.7	988.4	668.8	6:30	5:30	1487.2	106.6	1491.0	1648.1
10:10	1:50	692.6	724.7	1002.4	698.7	6:25	5:35	1491.1	88.9	1493.7	1659.3
10:05	1:55	721.5	716.2	1016.6	728.5	6:20	5:40	1494.3	71.2	1496.0	1670.0
10:00	2:00	750.0	707.5	1031.1	757.9	6:15	5:45	1496.8	53.4	1497.7	1680.3
9:55	2:05	778.2	698.4	1045.6	787.1	6:10	5:50	1498.6	35.6	1499.0	1690.0
9:50	2:10	805.9	689.0	1060.3	816.0	6:05	5:55	1499.6	17.8	1499.7	1699.3
9:45	2:15	833.4	679.3	1075.1	844.7	6:00	6:00	1500.0	0.0	1500.0	1708.0
9:40	2:20	860.4	669.2	1090.0	873.0	5:55	6:05	1499.6	-17.8	1499.7	1716.3
9:35	2:25	887.0	658.8	1104.9	900.9	5:50	6:10	1498.6	-35.6	1499.0	1724.1
9:30	2:30	913.1	648.1	1119.8	928.6	5:45	6:15	1496.8	-53.4	1497.7	1731.5
9:25	2:35	938.9	637.1	1134.7	956.0	5:40	6:20	1494.3	-71.2	1496.0	1738.3
9:20	2:40	964.2	625.8	1149.5	982.9	5:35	6:25	1491.1	-88.9	1493.7	1744.7
9:15	2:45	989.0	614.2	1164.2	1009.6	5:30	6:30	1487.2	-106.6	1491.0	1750.6
9:10	2:50	1013.4	602.3	1178.9	1035.9	5:25	6:35	1482.5	-124.3	1487.7	1756.1
9:05	2:55	1037.3	590.1	1193.4	1061.8	5:20	6:40	1477.2	-141.9	1484.0	1761.1
9:00	3:00	1060.7	577.7	1207.8	1087.3	5:15	6:45	1471.2	-159.4	1479.8	1765.7
8:55	3:05	1083.5	564.9	1222.0	1112.5	5:10	6:50	1464.4	-176.8	1475.1	1769.8
8:50	3:10	1105.9	551.9	1236.0	1137.2	5:05	6:55	1457.0	-194.2	1469.9	1773.5
8:45	3:15	1127.8	538.7	1249.8	1161.6	5:00	7:00	1448.9	-211.4	1464.2	1776.8
8:40	3:20	1149.1	525.1	1263.4	1185.5	4:55	7:05	1440.1	-228.6	1458.1	1779.6
8:35	3:25	1169.8	511.4	1276.7	1209.1	4:50	7:10	1430.6	-245.7	1451.5	1782.1
8:30	3:30	1190.0	497.3	1289.8	1232.2	4:45	7:15	1420.4	-262.6	1444.5	1784.1
8:25	3:35	1209.7	483.1	1302.6	1254.9						
8:20	3:40	1228.7	468.6	1315.0	1277.2						
8:15	3:45	1247.2	453.9	1327.2	1299.0						

Analematic Sundial

Latitude: 33.0° N/S

Date Scale

Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 817.0 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-533.7	-523.7	-520.6	-506.7	-502.7	-485.4	-480.6	-460.1	-454.6	-431.4	-425.3
February	-386.1	-357.9	-350.5	-320.7	-313.2	-281.9	-273.8	-241.6	-233.4	-200.1	-191.6
March	-166.3	-132.2	-123.6	-89.1	-80.5	-45.7	-37.1	-2.2	6.4	41.1	49.6
April	101.2	135.1	143.6	176.8	185.1	217.7	225.7	257.5	265.3	296.0	303.4
May	339.9	367.9	374.5	400.5	406.8	430.7	436.4	458.1	463.4	482.4	486.7
June	510.3	522.6	525.5	534.5	536.6	542.3	543.1	545.2	545.4	541.5	543.3
July	536.6	528.0	525.5	513.9	510.6	495.5	491.5	473.6	468.8	448.5	443.0
August	408.3	382.9	376.5	349.3	342.5	313.9	306.4	276.6	269.0	237.9	230.0
September	182.0	149.1	140.9	107.4	99.0	65.3	56.9	22.8	14.3	-20.0	-28.5
October	-71.2	-105.4	-113.8	-147.8	-156.0	-189.6	-197.9	-230.7	-238.8	-270.8	-278.7
November	-324.6	-354.1	-361.2	-388.9	-395.7	-421.4	-427.5	-450.9	-456.4	-477.1	-482.1
December	-503.7	-518.3	-521.3	-531.9	-534.3	-541.0	-542.3	-545.2	-545.4	-544.1	-543.3

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	533.7	523.7	520.6	506.7	502.7	485.4	480.6	460.1	454.6	431.4	425.3
February	386.1	357.9	350.5	320.7	313.2	281.9	273.8	241.6	233.4	200.1	191.6
March	166.3	132.2	123.6	89.1	80.5	45.7	37.1	2.2	-6.4	-41.1	-49.6
April	-101.2	-135.1	-143.6	-176.8	-185.1	-217.7	-225.7	-257.5	-265.3	-296.0	-303.4
May	-339.9	-367.9	-374.5	-400.5	-406.8	-430.7	-436.4	-458.1	-463.4	-482.4	-486.7
June	-510.3	-522.6	-525.5	-534.5	-536.6	-542.3	-543.1	-545.2	-545.4	-541.5	-543.3
July	-536.6	-528.0	-525.5	-513.9	-510.6	-495.5	-491.5	-473.6	-468.8	-448.5	-443.0
August	-408.3	-382.9	-376.5	-349.3	-342.5	-313.9	-306.4	-276.6	-269.0	-237.9	-230.0
September	-182.0	-149.1	-140.9	-107.4	-99.0	-65.3	-56.9	-22.8	-14.3	20.0	28.5
October	71.2	105.4	113.8	147.8	156.0	189.6	197.9	230.7	238.8	270.8	278.7
November	324.6	354.1	361.2	388.9	395.7	421.4	427.5	450.9	456.4	477.1	482.1
December	503.7	518.3	521.3	531.9	534.3	541.0	542.3	545.2	545.4	544.1	543.3

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: 33.0° N/S

Earliest Sunrise: 4:50 a.m. Latest Sunset: 7:10 p.m.
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1089.3 mm
 Sunrise/Sunset Markers: X = ± 1366.0 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	1089.3	1089.3	0.0							
11:55	12:05	43.6	1089.0	1089.9	43.6	8:10	3:50	1686.8	585.3	1785.4	1760.5
11:50	12:10	87.2	1088.2	1091.7	87.2	8:05	3:55	1709.8	565.1	1800.8	1788.4
11:45	12:15	130.8	1086.9	1094.8	130.8	8:00	4:00	1732.1	544.6	1815.7	1815.7
11:40	12:20	174.3	1085.1	1099.0	174.4	7:55	4:05	1753.5	523.9	1830.1	1842.3
11:35	12:25	217.7	1082.8	1104.5	217.8	7:50	4:10	1774.0	503.0	1843.9	1868.4
11:30	12:30	261.1	1080.0	1111.1	261.2	7:45	4:15	1793.7	481.8	1857.3	1893.8
11:25	12:35	304.2	1076.6	1118.8	304.5	7:40	4:20	1812.6	460.3	1870.2	1918.6
11:20	12:40	347.3	1072.7	1127.5	347.7	7:35	4:25	1830.6	438.7	1882.5	1942.8
11:15	12:45	390.2	1068.3	1137.4	390.7	7:30	4:30	1847.8	416.8	1894.2	1966.3
11:10	12:50	432.9	1063.5	1148.2	433.6	7:25	4:35	1864.0	394.8	1905.4	1989.2
11:05	12:55	475.4	1058.1	1159.9	476.4	7:20	4:40	1879.4	372.6	1916.0	2011.4
11:00	1:00	517.6	1052.2	1172.6	519.0	7:15	4:45	1893.9	350.1	1926.0	2033.0
10:55	1:05	559.7	1045.8	1186.1	561.3	7:10	4:50	1907.4	327.6	1935.4	2053.9
10:50	1:10	601.4	1038.9	1200.4	603.5	7:05	4:55	1920.1	304.8	1944.1	2074.2
10:45	1:15	642.9	1031.5	1215.4	645.5	7:00	5:00	1931.9	281.9	1952.3	2093.8
10:40	1:20	684.0	1023.6	1231.1	687.2	6:55	5:05	1942.7	258.9	1959.9	2112.7
10:35	1:25	724.9	1015.2	1247.4	728.6	6:50	5:10	1952.6	235.8	1966.8	2131.0
10:30	1:30	765.4	1006.4	1264.3	769.8	6:45	5:15	1961.6	212.5	1973.0	2148.6
10:25	1:35	805.5	997.0	1281.8	810.8	6:40	5:20	1969.6	189.2	1978.7	2165.6
10:20	1:40	845.2	987.2	1299.6	851.4	6:35	5:25	1976.7	165.7	1983.7	2181.8
10:15	1:45	884.6	976.9	1317.9	891.7	6:30	5:30	1982.9	142.2	1988.0	2197.5
10:10	1:50	923.5	966.2	1336.6	931.7	6:25	5:35	1988.1	118.6	1991.6	2212.4
10:05	1:55	962.0	955.0	1355.5	971.3	6:20	5:40	1992.4	94.9	1994.6	2226.7
10:00	2:00	1000.0	943.3	1374.7	1010.6	6:15	5:45	1995.7	71.2	1997.0	2240.4
9:55	2:05	1037.5	931.2	1394.2	1049.5	6:10	5:50	1998.1	47.5	1998.7	2253.4
9:50	2:10	1074.6	918.7	1413.8	1088.1	6:05	5:55	1999.5	23.8	1999.7	2265.7
9:45	2:15	1111.1	905.7	1433.5	1126.2	6:00	6:00	2000.0	0.0	2000.0	2277.4
9:40	2:20	1147.2	892.3	1453.3	1163.9	5:55	6:05	1999.5	-23.8	1999.7	2288.4
9:35	2:25	1182.6	878.4	1473.2	1201.3	5:50	6:10	1998.1	-47.5	1998.7	2298.8
9:30	2:30	1217.5	864.2	1493.0	1238.2	5:45	6:15	1995.7	-71.2	1997.0	2308.6
9:25	2:35	1251.8	849.5	1512.9	1274.6	5:40	6:20	1992.4	-94.9	1994.6	2317.8
9:20	2:40	1285.6	834.4	1532.6	1310.6	5:35	6:25	1988.1	-118.6	1991.6	2326.3
9:15	2:45	1318.7	819.0	1552.3	1346.1	5:30	6:30	1982.9	-142.2	1988.0	2334.2
9:10	2:50	1351.2	803.1	1571.8	1381.2	5:25	6:35	1976.7	-165.7	1983.7	2341.5
9:05	2:55	1383.0	786.9	1591.2	1415.7	5:20	6:40	1969.6	-189.2	1978.7	2348.1
9:00	3:00	1414.2	770.2	1610.4	1449.8	5:15	6:45	1961.6	-212.5	1973.0	2354.2
8:55	3:05	1444.7	753.3	1629.3	1483.3	5:10	6:50	1952.6	-235.8	1966.8	2359.7
8:50	3:10	1474.6	735.9	1648.0	1516.3	5:05	6:55	1942.7	-258.9	1959.9	2364.7
8:45	3:15	1503.7	718.2	1666.4	1548.8	5:00	7:00	1931.9	-281.9	1952.3	2369.0
8:40	3:20	1532.1	700.2	1684.5	1580.7	4:55	7:05	1920.1	-304.8	1944.1	2372.8
8:35	3:25	1559.8	681.8	1702.3	1612.1	4:50	7:10	1907.4	-327.6	1935.4	2376.1
8:30	3:30	1586.7	663.1	1719.7	1642.9	4:45	7:15	1893.9	-350.1	1926.0	2378.8
8:25	3:35	1612.9	644.1	1736.7	1673.2						
8:20	3:40	1638.3	624.8	1753.4	1702.9						
8:15	3:45	1662.9	605.2	1769.6	1732.0						

Analematic Sundial

Latitude: 33.0° N/S

Date Scale

Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1089.3 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-711.6	-698.2	-694.1	-675.6	-670.2	-647.2	-640.8	-613.5	-606.2	-575.3	-567.1
February	-514.7	-477.2	-467.4	-427.5	-417.6	-375.9	-365.1	-322.1	-311.2	-266.9	-255.5
March	-221.7	-176.3	-164.8	-118.8	-107.3	-60.9	-49.5	-2.9	8.5	54.8	66.2
April	135.0	180.1	191.4	235.7	246.8	290.3	300.9	343.4	353.8	394.7	404.6
May	453.2	490.5	499.4	534.0	542.4	574.3	581.8	610.8	617.8	643.2	648.9
June	680.4	696.8	700.6	712.7	715.4	723.1	724.1	726.9	727.2	722.0	724.5
July	715.4	704.1	700.6	685.2	680.8	660.7	655.3	631.5	625.1	597.9	590.7
August	544.4	510.6	502.0	465.8	456.7	418.5	408.6	368.8	358.7	317.2	306.6
September	242.6	198.8	187.8	143.2	132.0	87.0	75.9	30.4	19.0	-26.6	-38.1
October	-95.0	-140.6	-151.8	-197.0	-208.0	-252.8	-263.9	-307.5	-318.5	-361.1	-371.6
November	-432.9	-472.1	-481.6	-518.6	-527.6	-561.9	-570.0	-601.2	-608.5	-636.2	-642.9
December	-671.6	-691.0	-695.1	-709.2	-712.3	-721.3	-723.1	-726.9	-727.2	-725.5	-724.5

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	711.6	698.2	694.1	675.6	670.2	647.2	640.8	613.5	606.2	575.3	567.1
February	514.7	477.2	467.4	427.5	417.6	375.9	365.1	322.1	311.2	266.9	255.5
March	221.7	176.3	164.8	118.8	107.3	60.9	49.5	2.9	-8.5	-54.8	-66.2
April	-135.0	-180.1	-191.4	-235.7	-246.8	-290.3	-300.9	-343.4	-353.8	-394.7	-404.6
May	-453.2	-490.5	-499.4	-534.0	-542.4	-574.3	-581.8	-610.8	-617.8	-643.2	-648.9
June	-680.4	-696.8	-700.6	-712.7	-715.4	-723.1	-724.1	-726.9	-727.2	-722.0	-724.5
July	-715.4	-704.1	-700.6	-685.2	-680.8	-660.7	-655.3	-631.5	-625.1	-597.9	-590.7
August	-544.4	-510.6	-502.0	-465.8	-456.7	-418.5	-408.6	-368.8	-358.7	-317.2	-306.6
September	-242.6	-198.8	-187.8	-143.2	-132.0	-87.0	-75.9	-30.4	-19.0	26.6	38.1
October	95.0	140.6	151.8	197.0	208.0	252.8	263.9	307.5	318.5	361.1	371.6
November	432.9	472.1	481.6	518.6	527.6	561.9	570.0	601.2	608.5	636.2	642.9
December	671.6	691.0	695.1	709.2	712.3	721.3	723.1	726.9	727.2	725.5	724.5

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: 33.0° N/S

Earliest Sunrise: 4:50 a.m. Latest Sunset: 7:10 p.m.
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 1361.6 mm
 Sunrise/Sunset Markers: X = ± 1707.5 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	1361.6	1361.6	0.0							
11:55	12:05	54.5	1361.3	1362.4	54.5	8:10	3:50	2108.5	731.6	2231.8	2200.6
11:50	12:10	109.0	1360.3	1364.7	109.1	8:05	3:55	2137.3	706.4	2251.0	2235.5
11:45	12:15	163.5	1358.7	1368.5	163.5	8:00	4:00	2165.1	680.8	2269.6	2269.6
11:40	12:20	217.9	1356.4	1373.8	218.0	7:55	4:05	2191.8	654.9	2287.6	2302.9
11:35	12:25	272.2	1353.5	1380.6	272.3	7:50	4:10	2217.5	628.7	2304.9	2335.5
11:30	12:30	326.3	1349.9	1388.8	326.5	7:45	4:15	2242.2	602.2	2321.6	2367.3
11:25	12:35	380.3	1345.8	1398.5	380.6	7:40	4:20	2265.8	575.4	2337.7	2398.3
11:20	12:40	434.1	1340.9	1409.4	434.6	7:35	4:25	2288.3	548.4	2353.1	2428.5
11:15	12:45	487.7	1335.4	1421.7	488.4	7:30	4:30	2309.7	521.1	2367.7	2457.9
11:10	12:50	541.1	1329.3	1435.2	542.1	7:25	4:35	2330.0	493.5	2381.7	2486.5
11:05	12:55	594.2	1322.6	1449.9	595.5	7:20	4:40	2349.2	465.7	2394.9	2514.3
11:00	1:00	647.0	1315.2	1465.8	648.7	7:15	4:45	2367.3	437.7	2407.4	2541.2
10:55	1:05	699.6	1307.2	1482.6	701.7	7:10	4:50	2384.3	409.4	2419.2	2567.4
10:50	1:10	751.8	1298.6	1500.5	754.4	7:05	4:55	2400.1	381.0	2430.2	2592.7
10:45	1:15	803.6	1289.3	1519.3	806.8	7:00	5:00	2414.8	352.4	2440.4	2617.2
10:40	1:20	855.1	1279.5	1538.9	859.0	6:55	5:05	2428.4	323.6	2449.8	2640.9
10:35	1:25	906.1	1269.0	1559.3	910.8	6:50	5:10	2440.7	294.7	2458.5	2663.7
10:30	1:30	956.7	1258.0	1580.4	962.3	6:45	5:15	2452.0	265.6	2466.3	2685.8
10:25	1:35	1006.9	1246.3	1602.2	1013.4	6:40	5:20	2462.0	236.4	2473.3	2706.9
10:20	1:40	1056.5	1234.0	1624.5	1064.2	6:35	5:25	2470.9	207.1	2479.6	2727.3
10:15	1:45	1105.7	1221.2	1647.4	1114.6	6:30	5:30	2478.6	177.7	2485.0	2746.8
10:10	1:50	1154.4	1207.8	1670.7	1164.6	6:25	5:35	2485.1	148.2	2489.6	2765.5
10:05	1:55	1202.5	1193.7	1694.4	1214.1	6:20	5:40	2490.5	118.7	2493.3	2783.4
10:00	2:00	1250.0	1179.2	1718.4	1263.2	6:15	5:45	2494.6	89.1	2496.2	2800.5
9:55	2:05	1296.9	1164.0	1742.7	1311.9	6:10	5:50	2497.6	59.4	2498.3	2816.7
9:50	2:10	1343.2	1148.4	1767.2	1360.1	6:05	5:55	2499.4	29.7	2499.6	2832.1
9:45	2:15	1388.9	1132.1	1791.9	1407.8	6:00	6:00	2500.0	0.0	2500.0	2846.7
9:40	2:20	1433.9	1115.4	1816.6	1454.9	5:55	6:05	2499.4	-29.7	2499.6	2860.5
9:35	2:25	1478.3	1098.1	1841.5	1501.6	5:50	6:10	2497.6	-59.4	2498.3	2873.6
9:30	2:30	1521.9	1080.2	1866.3	1547.7	5:45	6:15	2494.6	-89.1	2496.2	2885.8
9:25	2:35	1564.8	1061.9	1891.1	1593.3	5:40	6:20	2490.5	-118.7	2493.3	2897.2
9:20	2:40	1607.0	1043.0	1915.8	1638.2	5:35	6:25	2485.1	-148.2	2489.6	2907.8
9:15	2:45	1648.4	1023.7	1940.4	1682.6	5:30	6:30	2478.6	-177.7	2485.0	2917.7
9:10	2:50	1689.0	1003.9	1964.8	1726.4	5:25	6:35	2470.9	-207.1	2479.6	2926.8
9:05	2:55	1728.8	983.6	1989.0	1769.6	5:20	6:40	2462.0	-236.4	2473.3	2935.2
9:00	3:00	1767.8	962.8	2013.0	1812.2	5:15	6:45	2452.0	-265.6	2466.3	2942.8
8:55	3:05	1805.9	941.6	2036.6	1854.1	5:10	6:50	2440.7	-294.7	2458.5	2949.7
8:50	3:10	1843.2	919.9	2060.0	1895.4	5:05	6:55	2428.4	-323.6	2449.8	2955.8
8:45	3:15	1879.6	897.8	2083.0	1936.0	5:00	7:00	2414.8	-352.4	2440.4	2961.3
8:40	3:20	1915.1	875.2	2105.6	1975.9	4:55	7:05	2400.1	-381.0	2430.2	2966.0
8:35	3:25	1949.7	852.3	2127.8	2015.1	4:50	7:10	2384.3	-409.4	2419.2	2970.1
8:30	3:30	1983.4	828.9	2149.6	2053.7	4:45	7:15	2367.3	-437.7	2407.4	2973.5
8:25	3:35	2016.1	805.1	2170.9	2091.5						
8:20	3:40	2047.9	781.0	2191.7	2128.6						
8:15	3:45	2078.7	756.5	2212.0	2165.0						

Analematic Sundial

Latitude: 33.0° N/S

Date Scale

Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 1361.6 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-889.6	-872.8	-867.6	-844.6	-837.8	-809.0	-801.1	-766.9	-757.7	-719.1	-708.9
February	-643.4	-596.5	-584.2	-534.4	-522.0	-469.8	-456.4	-402.6	-389.0	-333.6	-319.3
March	-277.1	-220.4	-206.0	-148.5	-134.1	-76.1	-61.9	-3.7	10.6	68.5	82.7
April	168.7	225.2	239.3	294.7	308.5	362.9	376.1	429.2	442.2	493.3	505.7
May	566.5	613.1	624.2	667.5	678.0	717.9	727.3	763.5	772.3	804.0	811.1
June	850.5	871.0	875.8	890.9	894.3	903.8	905.1	908.6	909.1	902.5	905.6
July	894.3	880.1	875.8	856.5	850.9	825.9	819.1	789.3	781.4	747.4	738.4
August	680.4	638.2	627.4	582.2	570.8	523.1	510.7	461.0	448.3	396.6	383.3
September	303.3	248.5	234.8	179.0	165.0	108.8	94.8	38.1	23.8	-33.3	-47.6
October	-118.7	-175.7	-189.7	-246.3	-260.0	-316.0	-329.8	-384.4	-398.1	-451.4	-464.4
November	-541.1	-590.1	-602.0	-648.2	-659.5	-702.4	-712.5	-751.5	-760.6	-795.2	-803.6
December	-839.5	-863.8	-868.9	-886.5	-890.4	-901.7	-903.8	-908.6	-909.1	-906.9	-905.6

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	889.6	872.8	867.6	844.6	837.8	809.0	801.1	766.9	757.7	719.1	708.9
February	643.4	596.5	584.2	534.4	522.0	469.8	456.4	402.6	389.0	333.6	319.3
March	277.1	220.4	206.0	148.5	134.1	76.1	61.9	3.7	-10.6	-68.5	-82.7
April	-168.7	-225.2	-239.3	-294.7	-308.5	-362.9	-376.1	-429.2	-442.2	-493.3	-505.7
May	-566.5	-613.1	-624.2	-667.5	-678.0	-717.9	-727.3	-763.5	-772.3	-804.0	-811.1
June	-850.5	-871.0	-875.8	-890.9	-894.3	-903.8	-905.1	-908.6	-909.1	-902.5	-905.6
July	-894.3	-880.1	-875.8	-856.5	-850.9	-825.9	-819.1	-789.3	-781.4	-747.4	-738.4
August	-680.4	-638.2	-627.4	-582.2	-570.8	-523.1	-510.7	-461.0	-448.3	-396.6	-383.3
September	-303.3	-248.5	-234.8	-179.0	-165.0	-108.8	-94.8	-38.1	-23.8	33.3	47.6
October	118.7	175.7	189.7	246.3	260.0	316.0	329.8	384.4	398.1	451.4	464.4
November	541.1	590.1	602.0	648.2	659.5	702.4	712.5	751.5	760.6	795.2	803.6
December	839.5	863.8	868.9	886.5	890.4	901.7	903.8	908.6	909.1	906.9	905.6

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 |