

## Analemmatic Sundial

Latitude: 55.5° N/S

Earliest Sunrise: 3:15 a.m.    Latest Sunset: 8:45 p.m.  
 Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 824.1 mm  
 Sunrise/Sunset Markers: X = ± 271.0 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	824.1	824.1	0.0						
11:55	12:05	21.8	823.9	824.2	21.8	8:25	3:35	806.4	487.3	942.2	874.0
11:50	12:10	43.6	823.3	824.5	43.6	8:20	3:40	819.2	472.7	945.8	891.4
11:45	12:15	65.4	822.4	825.0	65.4	8:15	3:45	831.5	457.9	949.2	908.6
11:40	12:20	87.2	821.0	825.6	87.2	8:10	3:50	843.4	442.8	952.6	925.6
11:35	12:25	108.9	819.2	826.4	109.0	8:05	3:55	854.9	427.5	955.9	942.4
11:30	12:30	130.5	817.1	827.4	130.7	8:00	4:00	866.0	412.1	959.1	959.1
11:25	12:35	152.1	814.5	828.6	152.4	7:55	4:05	876.7	396.4	962.2	975.5
11:20	12:40	173.6	811.6	830.0	174.1	7:50	4:10	887.0	380.5	965.2	991.7
11:15	12:45	195.1	808.3	831.5	195.7	7:45	4:15	896.9	364.5	968.1	1007.8
11:10	12:50	216.4	804.6	833.2	217.3	7:40	4:20	906.3	348.3	970.9	1023.6
11:05	12:55	237.7	800.5	835.0	238.9	7:35	4:25	915.3	331.9	973.6	1039.3
11:00	1:00	258.8	796.0	837.1	260.3	7:30	4:30	923.9	315.4	976.2	1054.7
10:55	1:05	279.8	791.2	839.2	281.8	7:25	4:35	932.0	298.7	978.7	1069.9
10:50	1:10	300.7	786.0	841.5	303.1	7:20	4:40	939.7	281.9	981.1	1084.9
10:45	1:15	321.4	780.4	844.0	324.4	7:15	4:45	946.9	264.9	983.3	1099.7
10:40	1:20	342.0	774.4	846.6	345.6	7:10	4:50	953.7	247.8	985.4	1114.3
10:35	1:25	362.4	768.1	849.3	366.7	7:05	4:55	960.0	230.6	987.4	1128.7
10:30	1:30	382.7	761.4	852.2	387.8	7:00	5:00	965.9	213.3	989.2	1142.9
10:25	1:35	402.7	754.3	855.1	408.7	6:55	5:05	971.3	195.9	990.9	1156.8
10:20	1:40	422.6	746.9	858.2	429.6	6:50	5:10	976.3	178.4	992.5	1170.5
10:15	1:45	442.3	739.1	861.4	450.4	6:45	5:15	980.8	160.8	993.9	1184.0
10:10	1:50	461.7	731.0	864.6	471.0	6:40	5:20	984.8	143.1	995.2	1197.3
10:05	1:55	481.0	722.5	868.0	491.6	6:35	5:25	988.4	125.4	996.3	1210.4
10:00	2:00	500.0	713.7	871.4	512.0	6:30	5:30	991.4	107.6	997.3	1223.3
9:55	2:05	518.8	704.6	874.9	532.4	6:25	5:35	994.1	89.7	998.1	1235.9
9:50	2:10	537.3	695.1	878.5	552.6	6:20	5:40	996.2	71.8	998.8	1248.3
9:45	2:15	555.6	685.2	882.2	572.7	6:15	5:45	997.9	53.9	999.3	1260.5
9:40	2:20	573.6	675.1	885.8	592.6	6:10	5:50	999.0	35.9	999.7	1272.5
9:35	2:25	591.3	664.6	889.6	612.4	6:05	5:55	999.8	18.0	999.9	1284.3
9:30	2:30	608.8	653.8	893.4	632.1	6:00	6:00	1000.0	0.0	1000.0	1295.8
9:25	2:35	625.9	642.7	897.1	651.7	5:55	6:05	999.8	-18.0	999.9	1307.2
9:20	2:40	642.8	631.3	901.0	671.1	5:50	6:10	999.0	-35.9	999.7	1318.3
9:15	2:45	659.3	619.6	904.8	690.3	5:45	6:15	997.9	-53.9	999.3	1329.2
9:10	2:50	675.6	607.6	908.6	709.4	5:40	6:20	996.2	-71.8	998.8	1339.8
9:05	2:55	691.5	595.3	912.5	728.4	5:35	6:25	994.1	-89.7	998.1	1350.3
9:00	3:00	707.1	582.7	916.3	747.2	5:30	6:30	991.4	-107.6	997.3	1360.5
8:55	3:05	722.4	569.9	920.1	765.8	5:25	6:35	988.4	-125.4	996.3	1370.5
8:50	3:10	737.3	556.8	923.9	784.3	5:20	6:40	984.8	-143.1	995.2	1380.4
8:45	3:15	751.8	543.4	927.6	802.5	5:15	6:45	980.8	-160.8	993.9	1390.0
8:40	3:20	766.0	529.7	931.4	820.7	5:10	6:50	976.3	-178.4	992.5	1399.3
8:35	3:25	779.9	515.8	935.0	838.6	5:05	6:55	971.3	-195.9	990.9	1408.5
8:30	3:30	793.4	501.7	938.7	856.4	5:00	7:00	965.9	-213.3	989.2	1417.5

## Analemmatic Sundial

Latitude: 55.5° N/S

Earliest Sunrise: 3:15 a.m.    Latest Sunset: 8:45 p.m.  
 Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 824.1 mm  
 Sunrise/Sunset Markers: X = ± 271.0 mm

Local Time		X	Y	Z	W
4:55	7:05	960.0	-230.6	987.4	1426.2
4:50	7:10	953.7	-247.8	985.4	1434.8
4:45	7:15	946.9	-264.9	983.3	1443.1
4:40	7:20	939.7	-281.9	981.1	1451.3
4:35	7:25	932.0	-298.7	978.7	1459.2
4:30	7:30	923.9	-315.4	976.2	1467.0
4:25	7:35	915.3	-331.9	973.6	1474.5
4:20	7:40	906.3	-348.3	970.9	1481.9
4:15	7:45	896.9	-364.5	968.1	1489.0
4:10	7:50	887.0	-380.5	965.2	1496.0
4:05	7:55	876.7	-396.4	962.2	1502.8
4:00	8:00	866.0	-412.1	959.1	1509.4
3:55	8:05	854.9	-427.5	955.9	1515.8
3:50	8:10	843.4	-442.8	952.6	1522.0
3:45	8:15	831.5	-457.9	949.2	1528.0
3:40	8:20	819.2	-472.7	945.8	1533.9
3:35	8:25	806.4	-487.3	942.2	1539.6
3:30	8:30	793.4	-501.7	938.7	1545.1
3:25	8:35	779.9	-515.8	935.0	1550.4
3:20	8:40	766.0	-529.7	931.4	1555.6
3:15	8:45	751.8	-543.4	927.6	1560.6

## Analemmatic Sundial

Latitude: 55.5° N/S

## Date Scale

Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 824.1 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-240.3	-235.8	-234.4	-228.2	-226.3	-218.6	-216.4	-207.2	-204.7	-194.3	-191.5
February	-173.8	-161.1	-157.8	-144.4	-141.0	-126.9	-123.3	-108.8	-105.1	-90.1	-86.3
March	-74.9	-59.5	-55.6	-40.1	-36.2	-20.6	-16.7	-1.0	2.9	18.5	22.4
April	45.6	60.8	64.6	79.6	83.3	98.0	101.6	116.0	119.5	133.3	136.6
May	153.0	165.6	168.6	180.3	183.2	193.9	196.5	206.3	208.6	217.2	219.1
June	229.8	235.3	236.6	240.7	241.6	244.2	244.5	245.5	245.6	243.8	244.6
July	241.6	237.7	236.6	231.4	229.9	223.1	221.3	213.2	211.1	201.9	199.5
August	183.8	172.4	169.5	157.3	154.2	141.3	138.0	124.5	121.1	107.1	103.5
September	81.9	67.1	63.4	48.4	44.6	29.4	25.6	10.3	6.4	-9.0	-12.9
October	-32.1	-47.5	-51.2	-66.5	-70.2	-85.4	-89.1	-103.9	-107.5	-121.9	-125.5
November	-146.2	-159.4	-162.6	-175.1	-178.2	-189.7	-192.5	-203.0	-205.5	-214.8	-217.1
December	-226.8	-233.3	-234.7	-239.5	-240.5	-243.6	-244.2	-245.5	-245.6	-245.0	-244.6

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	240.3	235.8	234.4	228.2	226.3	218.6	216.4	207.2	204.7	194.3	191.5
February	173.8	161.1	157.8	144.4	141.0	126.9	123.3	108.8	105.1	90.1	86.3
March	74.9	59.5	55.6	40.1	36.2	20.6	16.7	1.0	-2.9	-18.5	-22.4
April	-45.6	-60.8	-64.6	-79.6	-83.3	-98.0	-101.6	-116.0	-119.5	-133.3	-136.6
May	-153.0	-165.6	-168.6	-180.3	-183.2	-193.9	-196.5	-206.3	-208.6	-217.2	-219.1
June	-229.8	-235.3	-236.6	-240.7	-241.6	-244.2	-244.5	-245.5	-245.6	-243.8	-244.6
July	-241.6	-237.7	-236.6	-231.4	-229.9	-223.1	-221.3	-213.2	-211.1	-201.9	-199.5
August	-183.8	-172.4	-169.5	-157.3	-154.2	-141.3	-138.0	-124.5	-121.1	-107.1	-103.5
September	-81.9	-67.1	-63.4	-48.4	-44.6	-29.4	-25.6	-10.3	-6.4	9.0	12.9
October	32.1	47.5	51.2	66.5	70.2	85.4	89.1	103.9	107.5	121.9	125.5
November	146.2	159.4	162.6	175.1	178.2	189.7	192.5	203.0	205.5	214.8	217.1
December	226.8	233.3	234.7	239.5	240.5	243.6	244.2	245.5	245.6	245.0	244.6

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

## Analemmatic Sundial

Latitude: 55.5° N/S

Earliest Sunrise: 3:15 a.m.    Latest Sunset: 8:45 p.m.  
 Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 1236.2 mm  
 Sunrise/Sunset Markers: X = ± 406.5 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1236.2	1236.2	0.0						
11:55	12:05	32.7	1235.9	1236.3	32.7	8:25	3:35	1209.7	731.0	1413.4	1310.9
11:50	12:10	65.4	1235.0	1236.7	65.4	8:20	3:40	1228.7	709.0	1418.6	1337.0
11:45	12:15	98.1	1233.5	1237.4	98.1	8:15	3:45	1247.2	686.8	1423.8	1362.8
11:40	12:20	130.7	1231.5	1238.4	130.8	8:10	3:50	1265.1	664.2	1428.9	1388.4
11:35	12:25	163.3	1228.8	1239.6	163.5	8:05	3:55	1282.4	641.3	1433.8	1413.6
11:30	12:30	195.8	1225.6	1241.2	196.1	8:00	4:00	1299.0	618.1	1438.6	1438.6
11:25	12:35	228.2	1221.8	1242.9	228.6	7:55	4:05	1315.1	594.6	1443.3	1463.3
11:20	12:40	260.5	1217.4	1245.0	261.1	7:50	4:10	1330.5	570.8	1447.8	1487.6
11:15	12:45	292.6	1212.4	1247.3	293.6	7:45	4:15	1345.3	546.8	1452.2	1511.7
11:10	12:50	324.7	1206.9	1249.8	326.0	7:40	4:20	1359.5	522.4	1456.4	1535.4
11:05	12:55	356.5	1200.8	1252.6	358.3	7:35	4:25	1373.0	497.9	1460.5	1558.9
11:00	1:00	388.2	1194.1	1255.6	390.5	7:30	4:30	1385.8	473.1	1464.3	1582.0
10:55	1:05	419.7	1186.8	1258.8	422.6	7:25	4:35	1398.0	448.0	1468.1	1604.9
10:50	1:10	451.1	1179.0	1262.3	454.7	7:20	4:40	1409.5	422.8	1471.6	1627.4
10:45	1:15	482.2	1170.6	1266.0	486.6	7:15	4:45	1420.4	397.4	1474.9	1649.6
10:40	1:20	513.0	1161.6	1269.9	518.4	7:10	4:50	1430.6	371.7	1478.1	1671.5
10:35	1:25	543.7	1152.1	1274.0	550.1	7:05	4:55	1440.1	345.9	1481.0	1693.0
10:30	1:30	574.0	1142.1	1278.2	581.7	7:00	5:00	1448.9	319.9	1483.8	1714.3
10:25	1:35	604.1	1131.5	1282.7	613.1	6:55	5:05	1457.0	293.8	1486.3	1735.2
10:20	1:40	633.9	1120.4	1287.3	644.4	6:50	5:10	1464.4	267.6	1488.7	1755.8
10:15	1:45	663.4	1108.7	1292.0	675.6	6:45	5:15	1471.2	241.2	1490.8	1776.1
10:10	1:50	692.6	1096.5	1296.9	706.6	6:40	5:20	1477.2	214.7	1492.7	1796.0
10:05	1:55	721.5	1083.8	1302.0	737.4	6:35	5:25	1482.5	188.1	1494.4	1815.6
10:00	2:00	750.0	1070.6	1307.1	768.1	6:30	5:30	1487.2	161.4	1495.9	1834.9
9:55	2:05	778.2	1056.8	1312.4	798.6	6:25	5:35	1491.1	134.6	1497.1	1853.9
9:50	2:10	805.9	1042.6	1317.8	828.9	6:20	5:40	1494.3	107.7	1498.2	1872.5
9:45	2:15	833.4	1027.9	1323.2	859.0	6:15	5:45	1496.8	80.9	1499.0	1890.8
9:40	2:20	860.4	1012.6	1328.8	888.9	6:10	5:50	1498.6	53.9	1499.5	1908.8
9:35	2:25	887.0	996.9	1334.4	918.7	6:05	5:55	1499.6	27.0	1499.9	1926.4
9:30	2:30	913.1	980.7	1340.0	948.2	6:00	6:00	1500.0	0.0	1500.0	1943.7
9:25	2:35	938.9	964.1	1345.7	977.5	5:55	6:05	1499.6	-27.0	1499.9	1960.7
9:20	2:40	964.2	947.0	1351.4	1006.6	5:50	6:10	1498.6	-53.9	1499.5	1977.4
9:15	2:45	989.0	929.4	1357.2	1035.5	5:45	6:15	1496.8	-80.9	1499.0	1993.7
9:10	2:50	1013.4	911.4	1362.9	1064.2	5:40	6:20	1494.3	-107.7	1498.2	2009.7
9:05	2:55	1037.3	893.0	1368.7	1092.6	5:35	6:25	1491.1	-134.6	1497.1	2025.4
9:00	3:00	1060.7	874.1	1374.4	1120.8	5:30	6:30	1487.2	-161.4	1495.9	2040.8
8:55	3:05	1083.5	854.8	1380.2	1148.7	5:25	6:35	1482.5	-188.1	1494.4	2055.8
8:50	3:10	1105.9	835.2	1385.8	1176.4	5:20	6:40	1477.2	-214.7	1492.7	2070.5
8:45	3:15	1127.8	815.1	1391.5	1203.8	5:15	6:45	1471.2	-241.2	1490.8	2084.9
8:40	3:20	1149.1	794.6	1397.1	1231.0	5:10	6:50	1464.4	-267.6	1488.7	2099.0
8:35	3:25	1169.8	773.8	1402.6	1257.9	5:05	6:55	1457.0	-293.8	1486.3	2112.8
8:30	3:30	1190.0	752.5	1408.0	1284.6	5:00	7:00	1448.9	-319.9	1483.8	2126.2

## Analemmatic Sundial

Latitude: 55.5° N/S

Earliest Sunrise: 3:15 a.m.    Latest Sunset: 8:45 p.m.  
 Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 1236.2 mm  
 Sunrise/Sunset Markers: X = ± 406.5 mm

Local Time		X	Y	Z	W
4:55	7:05	1440.1	-345.9	1481.0	2139.4
4:50	7:10	1430.6	-371.7	1478.1	2152.2
4:45	7:15	1420.4	-397.4	1474.9	2164.7
4:40	7:20	1409.5	-422.8	1471.6	2176.9
4:35	7:25	1398.0	-448.0	1468.1	2188.9
4:30	7:30	1385.8	-473.1	1464.3	2200.5
4:25	7:35	1373.0	-497.9	1460.5	2211.8
4:20	7:40	1359.5	-522.4	1456.4	2222.8
4:15	7:45	1345.3	-546.8	1452.2	2233.5
4:10	7:50	1330.5	-570.8	1447.8	2244.0
4:05	7:55	1315.1	-594.6	1443.3	2254.2
4:00	8:00	1299.0	-618.1	1438.6	2264.0
3:55	8:05	1282.4	-641.3	1433.8	2273.6
3:50	8:10	1265.1	-664.2	1428.9	2283.0
3:45	8:15	1247.2	-686.8	1423.8	2292.0
3:40	8:20	1228.7	-709.0	1418.6	2300.8
3:35	8:25	1209.7	-731.0	1413.4	2309.3
3:30	8:30	1190.0	-752.5	1408.0	2317.6
3:25	8:35	1169.8	-773.8	1402.6	2325.6
3:20	8:40	1149.1	-794.6	1397.1	2333.3
3:15	8:45	1127.8	-815.1	1391.5	2340.8

## Analematic Sundial

Latitude: 55.5° N/S

## Date Scale

Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 1236.2 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-360.5	-353.7	-351.6	-342.2	-339.5	-327.8	-324.6	-310.7	-307.1	-291.4	-287.2
February	-260.7	-241.7	-236.7	-216.6	-211.5	-190.4	-184.9	-163.1	-157.6	-135.2	-129.4
March	-112.3	-89.3	-83.5	-60.2	-54.3	-30.9	-25.1	-1.5	4.3	27.7	33.5
April	68.4	91.2	97.0	119.4	125.0	147.1	152.4	173.9	179.2	199.9	204.9
May	229.6	248.4	253.0	270.5	274.7	290.9	294.7	309.4	312.9	325.8	328.7
June	344.6	353.0	354.9	361.0	362.4	366.3	366.8	368.2	368.4	365.7	367.0
July	362.4	356.6	354.9	347.1	344.8	334.7	331.9	319.9	316.6	302.9	299.2
August	275.7	258.6	254.2	235.9	231.3	212.0	207.0	186.8	181.7	160.7	155.3
September	122.9	100.7	95.1	72.5	66.9	44.1	38.4	15.4	9.6	-13.5	-19.3
October	-48.1	-71.2	-76.9	-99.8	-105.4	-128.0	-133.7	-155.8	-161.3	-182.9	-188.2
November	-219.2	-239.1	-243.9	-262.7	-267.2	-284.6	-288.7	-304.5	-308.2	-322.2	-325.6
December	-340.2	-350.0	-352.1	-359.2	-360.8	-365.4	-366.3	-368.2	-368.4	-367.5	-367.0

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	360.5	353.7	351.6	342.2	339.5	327.8	324.6	310.7	307.1	291.4	287.2
February	260.7	241.7	236.7	216.6	211.5	190.4	184.9	163.1	157.6	135.2	129.4
March	112.3	89.3	83.5	60.2	54.3	30.9	25.1	1.5	-4.3	-27.7	-33.5
April	-68.4	-91.2	-97.0	-119.4	-125.0	-147.1	-152.4	-173.9	-179.2	-199.9	-204.9
May	-229.6	-248.4	-253.0	-270.5	-274.7	-290.9	-294.7	-309.4	-312.9	-325.8	-328.7
June	-344.6	-353.0	-354.9	-361.0	-362.4	-366.3	-366.8	-368.2	-368.4	-365.7	-367.0
July	-362.4	-356.6	-354.9	-347.1	-344.8	-334.7	-331.9	-319.9	-316.6	-302.9	-299.2
August	-275.7	-258.6	-254.2	-235.9	-231.3	-212.0	-207.0	-186.8	-181.7	-160.7	-155.3
September	-122.9	-100.7	-95.1	-72.5	-66.9	-44.1	-38.4	-15.4	-9.6	13.5	19.3
October	48.1	71.2	76.9	99.8	105.4	128.0	133.7	155.8	161.3	182.9	188.2
November	219.2	239.1	243.9	262.7	267.2	284.6	288.7	304.5	308.2	322.2	325.6
December	340.2	350.0	352.1	359.2	360.8	365.4	366.3	368.2	368.4	367.5	367.0

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: 55.5° N/S

Earliest Sunrise: 3:15 a.m.    Latest Sunset: 8:45 p.m.  
 Semi-Major Axis (E-W): 2000 mm    Semi-Minor Axis (N-S): 1648.3 mm  
 Sunrise/Sunset Markers: X = ± 541.9 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1648.3	1648.3	0.0						
11:55	12:05	43.6	1647.9	1648.4	43.6	8:25	3:35	1612.9	974.6	1884.5	1747.9
11:50	12:10	87.2	1646.7	1649.0	87.3	8:20	3:40	1638.3	945.4	1891.5	1782.7
11:45	12:15	130.8	1644.7	1649.9	130.9	8:15	3:45	1662.9	915.7	1898.4	1817.1
11:40	12:20	174.3	1642.0	1651.2	174.4	8:10	3:50	1686.8	885.6	1905.1	1851.2
11:35	12:25	217.7	1638.5	1652.9	218.0	8:05	3:55	1709.8	855.1	1911.7	1884.8
11:30	12:30	261.1	1634.2	1654.9	261.4	8:00	4:00	1732.1	824.1	1918.1	1918.1
11:25	12:35	304.2	1629.1	1657.2	304.9	7:55	4:05	1753.5	792.8	1924.3	1951.0
11:20	12:40	347.3	1623.2	1659.9	348.2	7:50	4:10	1774.0	761.1	1930.4	1983.5
11:15	12:45	390.2	1616.6	1663.0	391.5	7:45	4:15	1793.7	729.0	1936.2	2015.6
11:10	12:50	432.9	1609.2	1666.4	434.6	7:40	4:20	1812.6	696.6	1941.9	2047.3
11:05	12:55	475.4	1601.0	1670.1	477.7	7:35	4:25	1830.6	663.8	1947.3	2078.5
11:00	1:00	517.6	1592.1	1674.1	520.7	7:30	4:30	1847.8	630.8	1952.5	2109.4
10:55	1:05	559.7	1582.4	1678.5	563.5	7:25	4:35	1864.0	597.4	1957.4	2139.8
10:50	1:10	601.4	1572.0	1683.1	606.2	7:20	4:40	1879.4	563.7	1962.1	2169.9
10:45	1:15	642.9	1560.8	1688.0	648.8	7:15	4:45	1893.9	529.8	1966.6	2199.5
10:40	1:20	684.0	1548.9	1693.2	691.2	7:10	4:50	1907.4	495.6	1970.8	2228.6
10:35	1:25	724.9	1536.2	1698.6	733.5	7:05	4:55	1920.1	461.2	1974.7	2257.4
10:30	1:30	765.4	1522.8	1704.3	775.6	7:00	5:00	1931.9	426.6	1978.4	2285.7
10:25	1:35	805.5	1508.7	1710.2	817.5	6:55	5:05	1942.7	391.8	1981.8	2313.6
10:20	1:40	845.2	1493.8	1716.4	859.2	6:50	5:10	1952.6	356.7	1984.9	2341.1
10:15	1:45	884.6	1478.3	1722.7	900.8	6:45	5:15	1961.6	321.6	1987.8	2368.1
10:10	1:50	923.5	1462.0	1729.3	942.1	6:40	5:20	1969.6	286.2	1990.3	2394.7
10:05	1:55	962.0	1445.1	1736.0	983.2	6:35	5:25	1976.7	250.7	1992.6	2420.8
10:00	2:00	1000.0	1427.4	1742.9	1024.1	6:30	5:30	1982.9	215.1	1994.5	2446.6
9:55	2:05	1037.5	1409.1	1749.9	1064.7	6:25	5:35	1988.1	179.4	1996.2	2471.8
9:50	2:10	1074.6	1390.1	1757.0	1105.2	6:20	5:40	1992.4	143.7	1997.6	2496.7
9:45	2:15	1111.1	1370.5	1764.3	1145.3	6:15	5:45	1995.7	107.8	1998.6	2521.1
9:40	2:20	1147.2	1350.2	1771.7	1185.2	6:10	5:50	1998.1	71.9	1999.4	2545.1
9:35	2:25	1182.6	1329.2	1779.2	1224.9	6:05	5:55	1999.5	36.0	1999.8	2568.6
9:30	2:30	1217.5	1307.6	1786.7	1264.3	6:00	6:00	2000.0	0.0	2000.0	2591.7
9:25	2:35	1251.8	1285.4	1794.3	1303.4	5:55	6:05	1999.5	-36.0	1999.8	2614.3
9:20	2:40	1285.6	1262.6	1801.9	1342.2	5:50	6:10	1998.1	-71.9	1999.4	2636.5
9:15	2:45	1318.7	1239.2	1809.6	1380.7	5:45	6:15	1995.7	-107.8	1998.6	2658.3
9:10	2:50	1351.2	1215.2	1817.3	1418.9	5:40	6:20	1992.4	-143.7	1997.6	2679.7
9:05	2:55	1383.0	1190.6	1824.9	1456.8	5:35	6:25	1988.1	-179.4	1996.2	2700.6
9:00	3:00	1414.2	1165.5	1832.6	1494.3	5:30	6:30	1982.9	-215.1	1994.5	2721.0
8:55	3:05	1444.7	1139.8	1840.2	1531.6	5:25	6:35	1976.7	-250.7	1992.6	2741.1
8:50	3:10	1474.6	1113.5	1847.8	1568.5	5:20	6:40	1969.6	-286.2	1990.3	2760.7
8:45	3:15	1503.7	1086.8	1855.3	1605.1	5:15	6:45	1961.6	-321.6	1987.8	2779.9
8:40	3:20	1532.1	1059.5	1862.7	1641.3	5:10	6:50	1952.6	-356.7	1984.9	2798.7
8:35	3:25	1559.8	1031.7	1870.1	1677.2	5:05	6:55	1942.7	-391.8	1981.8	2817.0
8:30	3:30	1586.7	1003.4	1877.3	1712.7	5:00	7:00	1931.9	-426.6	1978.4	2835.0

## Analemmatic Sundial

Latitude: 55.5° N/S

Earliest Sunrise: 3:15 a.m.    Latest Sunset: 8:45 p.m.  
 Semi-Major Axis (E-W): 2000 mm    Semi-Minor Axis (N-S): 1648.3 mm  
 Sunrise/Sunset Markers: X = ± 541.9 mm

Local Time	X	Y	Z	W	
4:55	7:05	1920.1	-461.2	1974.7	2852.5
4:50	7:10	1907.4	-495.6	1970.8	2869.6
4:45	7:15	1893.9	-529.8	1966.6	2886.3
4:40	7:20	1879.4	-563.7	1962.1	2902.6
4:35	7:25	1864.0	-597.4	1957.4	2918.5
4:30	7:30	1847.8	-630.8	1952.5	2934.0
4:25	7:35	1830.6	-663.8	1947.3	2949.1
4:20	7:40	1812.6	-696.6	1941.9	2963.8
4:15	7:45	1793.7	-729.0	1936.2	2978.1
4:10	7:50	1774.0	-761.1	1930.4	2992.0
4:05	7:55	1753.5	-792.8	1924.3	3005.5
4:00	8:00	1732.1	-824.1	1918.1	3018.7
3:55	8:05	1709.8	-855.1	1911.7	3031.5
3:50	8:10	1686.8	-885.6	1905.1	3044.0
3:45	8:15	1662.9	-915.7	1898.4	3056.0
3:40	8:20	1638.3	-945.4	1891.5	3067.7
3:35	8:25	1612.9	-974.6	1884.5	3079.1
3:30	8:30	1586.7	-1003.4	1877.3	3090.1
3:25	8:35	1559.8	-1031.7	1870.1	3100.8
3:20	8:40	1532.1	-1059.5	1862.7	3111.1
3:15	8:45	1503.7	-1086.8	1855.3	3121.1

## Analematic Sundial

Latitude: 55.5° N/S

## Date Scale

Semi-Major Axis (E-W): 2000 mm    Semi-Minor Axis (N-S): 1648.3 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-480.6	-471.5	-468.8	-456.3	-452.6	-437.1	-432.8	-414.3	-409.4	-388.5	-383.0
February	-347.6	-322.3	-315.6	-288.8	-282.0	-253.8	-246.6	-217.5	-210.2	-180.2	-172.5
March	-149.7	-119.1	-111.3	-80.2	-72.5	-41.1	-33.4	-2.0	5.7	37.0	44.7
April	91.1	121.7	129.3	159.2	166.7	196.1	203.2	231.9	238.9	266.5	273.2
May	306.1	331.3	337.3	360.7	366.3	387.8	392.9	412.5	417.2	434.4	438.3
June	459.5	470.6	473.2	481.3	483.2	488.3	489.0	490.9	491.2	487.6	489.3
July	483.2	475.5	473.2	462.8	459.8	446.2	442.6	426.5	422.2	403.8	398.9
August	367.6	344.8	339.0	314.6	308.4	282.7	275.9	249.1	242.2	214.3	207.1
September	163.8	134.3	126.9	96.7	89.2	58.8	51.2	20.6	12.9	-18.0	-25.7
October	-64.1	-94.9	-102.5	-133.1	-140.5	-170.7	-178.2	-207.7	-215.1	-243.9	-250.9
November	-292.3	-318.8	-325.3	-350.2	-356.3	-379.5	-385.0	-406.1	-411.0	-429.6	-434.2
December	-453.6	-466.7	-469.5	-479.0	-481.1	-487.2	-488.3	-490.9	-491.2	-490.0	-489.3

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	480.6	471.5	468.8	456.3	452.6	437.1	432.8	414.3	409.4	388.5	383.0
February	347.6	322.3	315.6	288.8	282.0	253.8	246.6	217.5	210.2	180.2	172.5
March	149.7	119.1	111.3	80.2	72.5	41.1	33.4	2.0	-5.7	-37.0	-44.7
April	-91.1	-121.7	-129.3	-159.2	-166.7	-196.1	-203.2	-231.9	-238.9	-266.5	-273.2
May	-306.1	-331.3	-337.3	-360.7	-366.3	-387.8	-392.9	-412.5	-417.2	-434.4	-438.3
June	-459.5	-470.6	-473.2	-481.3	-483.2	-488.3	-489.0	-490.9	-491.2	-487.6	-489.3
July	-483.2	-475.5	-473.2	-462.8	-459.8	-446.2	-442.6	-426.5	-422.2	-403.8	-398.9
August	-367.6	-344.8	-339.0	-314.6	-308.4	-282.7	-275.9	-249.1	-242.2	-214.3	-207.1
September	-163.8	-134.3	-126.9	-96.7	-89.2	-58.8	-51.2	-20.6	-12.9	18.0	25.7
October	64.1	94.9	102.5	133.1	140.5	170.7	178.2	207.7	215.1	243.9	250.9
November	292.3	318.8	325.3	350.2	356.3	379.5	385.0	406.1	411.0	429.6	434.2
December	453.6	466.7	469.5	479.0	481.1	487.2	488.3	490.9	491.2	490.0	489.3

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: 55.5° N/S

Earliest Sunrise: 3:15 a.m. Latest Sunset: 8:45 p.m.  
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 2060.3 mm  
 Sunrise/Sunset Markers: X = ± 677.4 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	2060.3	2060.3	0.0						
11:55	12:05	54.5	2059.8	2060.5	54.5	8:25	3:35	2016.1	1218.3	2355.6	2184.9
11:50	12:10	109.0	2058.4	2061.2	109.1	8:20	3:40	2047.9	1181.7	2364.4	2228.4
11:45	12:15	163.5	2055.9	2062.4	163.6	8:15	3:45	2078.7	1144.6	2373.0	2271.4
11:40	12:20	217.9	2052.5	2064.0	218.0	8:10	3:50	2108.5	1107.0	2381.4	2314.0
11:35	12:25	272.2	2048.1	2066.1	272.4	8:05	3:55	2137.3	1068.8	2389.6	2356.1
11:30	12:30	326.3	2042.7	2068.6	326.8	8:00	4:00	2165.1	1030.2	2397.6	2397.6
11:25	12:35	380.3	2036.3	2071.5	381.1	7:55	4:05	2191.8	991.0	2405.4	2438.8
11:20	12:40	434.1	2029.0	2074.9	435.2	7:50	4:10	2217.5	951.3	2413.0	2479.4
11:15	12:45	487.7	2020.7	2078.8	489.3	7:45	4:15	2242.2	911.3	2420.3	2519.5
11:10	12:50	541.1	2011.5	2083.0	543.3	7:40	4:20	2265.8	870.7	2427.3	2559.1
11:05	12:55	594.2	2001.3	2087.6	597.1	7:35	4:25	2288.3	829.8	2434.1	2598.2
11:00	1:00	647.0	1990.1	2092.7	650.8	7:30	4:30	2309.7	788.4	2440.6	2636.7
10:55	1:05	699.6	1978.0	2098.1	704.4	7:25	4:35	2330.0	746.7	2446.8	2674.8
10:50	1:10	751.8	1965.0	2103.9	757.8	7:20	4:40	2349.2	704.7	2452.6	2712.3
10:45	1:15	803.6	1951.0	2110.0	811.0	7:15	4:45	2367.3	662.3	2458.2	2749.3
10:40	1:20	855.1	1936.1	2116.5	864.0	7:10	4:50	2384.3	619.5	2463.5	2785.8
10:35	1:25	906.1	1920.2	2123.3	916.9	7:05	4:55	2400.1	576.5	2468.4	2821.7
10:30	1:30	956.7	1903.5	2130.4	969.5	7:00	5:00	2414.8	533.2	2473.0	2857.1
10:25	1:35	1006.9	1885.8	2137.8	1021.9	6:55	5:05	2428.4	489.7	2477.2	2892.0
10:20	1:40	1056.5	1867.3	2145.5	1074.0	6:50	5:10	2440.7	445.9	2481.1	2926.3
10:15	1:45	1105.7	1847.8	2153.4	1126.0	6:45	5:15	2452.0	401.9	2484.7	2960.1
10:10	1:50	1154.4	1827.5	2161.6	1177.6	6:40	5:20	2462.0	357.8	2487.9	2993.4
10:05	1:55	1202.5	1806.3	2170.0	1229.0	6:35	5:25	2470.9	313.4	2490.7	3026.1
10:00	2:00	1250.0	1784.3	2178.6	1280.1	6:30	5:30	2478.6	268.9	2493.2	3058.2
9:55	2:05	1296.9	1761.4	2187.4	1330.9	6:25	5:35	2485.1	224.3	2495.2	3089.8
9:50	2:10	1343.2	1737.7	2196.3	1381.5	6:20	5:40	2490.5	179.6	2497.0	3120.9
9:45	2:15	1388.9	1713.1	2205.4	1431.7	6:15	5:45	2494.6	134.8	2498.3	3151.4
9:40	2:20	1433.9	1687.7	2214.6	1481.6	6:10	5:50	2497.6	89.9	2499.2	3181.3
9:35	2:25	1478.3	1661.5	2224.0	1531.1	6:05	5:55	2499.4	44.9	2499.8	3210.7
9:30	2:30	1521.9	1634.6	2233.4	1580.3	6:00	6:00	2500.0	0.0	2500.0	3239.6
9:25	2:35	1564.8	1606.8	2242.9	1629.2	5:55	6:05	2499.4	-44.9	2499.8	3267.9
9:20	2:40	1607.0	1578.3	2252.4	1677.7	5:50	6:10	2497.6	-89.9	2499.2	3295.7
9:15	2:45	1648.4	1549.0	2262.0	1725.8	5:45	6:15	2494.6	-134.8	2498.3	3322.9
9:10	2:50	1689.0	1519.0	2271.6	1773.6	5:40	6:20	2490.5	-179.6	2497.0	3349.6
9:05	2:55	1728.8	1488.3	2281.2	1821.0	5:35	6:25	2485.1	-224.3	2495.2	3375.7
9:00	3:00	1767.8	1456.9	2290.7	1867.9	5:30	6:30	2478.6	-268.9	2493.2	3401.3
8:55	3:05	1805.9	1424.7	2300.3	1914.5	5:25	6:35	2470.9	-313.4	2490.7	3426.4
8:50	3:10	1843.2	1391.9	2309.7	1960.6	5:20	6:40	2462.0	-357.8	2487.9	3450.9
8:45	3:15	1879.6	1358.5	2319.1	2006.4	5:15	6:45	2452.0	-401.9	2484.7	3474.9
8:40	3:20	1915.1	1324.3	2328.4	2051.7	5:10	6:50	2440.7	-445.9	2481.1	3498.4
8:35	3:25	1949.7	1289.6	2337.6	2096.5	5:05	6:55	2428.4	-489.7	2477.2	3521.3
8:30	3:30	1983.4	1254.2	2346.7	2140.9	5:00	7:00	2414.8	-533.2	2473.0	3543.7

## Analemmatic Sundial

Latitude: 55.5° N/S

Earliest Sunrise: 3:15 a.m.    Latest Sunset: 8:45 p.m.  
 Semi-Major Axis (E-W): 2500 mm    Semi-Minor Axis (N-S): 2060.3 mm  
 Sunrise/Sunset Markers:  $X = \pm 677.4$  mm

Local Time		X	Y	Z	W
4:55	7:05	2400.1	-576.5	2468.4	3565.6
4:50	7:10	2384.3	-619.5	2463.5	3587.0
4:45	7:15	2367.3	-662.3	2458.2	3607.9
4:40	7:20	2349.2	-704.7	2452.6	3628.2
4:35	7:25	2330.0	-746.7	2446.8	3648.1
4:30	7:30	2309.7	-788.4	2440.6	3667.4
4:25	7:35	2288.3	-829.8	2434.1	3686.3
4:20	7:40	2265.8	-870.7	2427.3	3704.7
4:15	7:45	2242.2	-911.3	2420.3	3722.6
4:10	7:50	2217.5	-951.3	2413.0	3740.0
4:05	7:55	2191.8	-991.0	2405.4	3756.9
4:00	8:00	2165.1	-1030.2	2397.6	3773.4
3:55	8:05	2137.3	-1068.8	2389.6	3789.4
3:50	8:10	2108.5	-1107.0	2381.4	3804.9
3:45	8:15	2078.7	-1144.6	2373.0	3820.0
3:40	8:20	2047.9	-1181.7	2364.4	3834.7
3:35	8:25	2016.1	-1218.3	2355.6	3848.9
3:30	8:30	1983.4	-1254.2	2346.7	3862.7
3:25	8:35	1949.7	-1289.6	2337.6	3876.0
3:20	8:40	1915.1	-1324.3	2328.4	3888.9
3:15	8:45	1879.6	-1358.5	2319.1	3901.4

**Analematic Sundial**

Latitude: 55.5° N/S

**Date Scale**

Semi-Major Axis (E-W): 2500 mm    Semi-Minor Axis (N-S): 2060.3 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-600.8	-589.4	-586.0	-570.4	-565.8	-546.4	-541.0	-517.9	-511.8	-485.6	-478.7
February	-434.5	-402.8	-394.6	-360.9	-352.5	-317.3	-308.2	-271.9	-262.7	-225.3	-215.7
March	-187.2	-148.8	-139.1	-100.3	-90.6	-51.4	-41.8	-2.5	7.2	46.2	55.9
April	113.9	152.1	161.6	199.0	208.3	245.1	254.0	289.9	298.7	333.2	341.5
May	382.6	414.1	421.6	450.8	457.9	484.8	491.2	515.7	521.6	543.0	547.8
June	574.4	588.3	591.5	601.6	604.0	610.4	611.3	613.6	613.9	609.5	611.6
July	604.0	594.4	591.5	578.4	574.7	557.8	553.2	533.1	527.7	504.8	498.7
August	459.5	431.0	423.7	393.2	385.5	353.3	344.9	311.3	302.8	267.8	258.9
September	204.8	167.8	158.6	120.9	111.4	73.5	64.1	25.7	16.1	-22.5	-32.1
October	-80.2	-118.7	-128.1	-166.3	-175.6	-213.4	-222.8	-259.6	-268.8	-304.9	-313.7
November	-365.4	-398.6	-406.6	-437.8	-445.4	-474.3	-481.2	-507.6	-513.7	-537.0	-542.7
December	-566.9	-583.4	-586.8	-598.7	-601.4	-609.0	-610.4	-613.6	-613.9	-612.5	-611.6

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	600.8	589.4	586.0	570.4	565.8	546.4	541.0	517.9	511.8	485.6	478.7
February	434.5	402.8	394.6	360.9	352.5	317.3	308.2	271.9	262.7	225.3	215.7
March	187.2	148.8	139.1	100.3	90.6	51.4	41.8	2.5	-7.2	-46.2	-55.9
April	-113.9	-152.1	-161.6	-199.0	-208.3	-245.1	-254.0	-289.9	-298.7	-333.2	-341.5
May	-382.6	-414.1	-421.6	-450.8	-457.9	-484.8	-491.2	-515.7	-521.6	-543.0	-547.8
June	-574.4	-588.3	-591.5	-601.6	-604.0	-610.4	-611.3	-613.6	-613.9	-609.5	-611.6
July	-604.0	-594.4	-591.5	-578.4	-574.7	-557.8	-553.2	-533.1	-527.7	-504.8	-498.7
August	-459.5	-431.0	-423.7	-393.2	-385.5	-353.3	-344.9	-311.3	-302.8	-267.8	-258.9
September	-204.8	-167.8	-158.6	-120.9	-111.4	-73.5	-64.1	-25.7	-16.1	22.5	32.1
October	80.2	118.7	128.1	166.3	175.6	213.4	222.8	259.6	268.8	304.9	313.7
November	365.4	398.6	406.6	437.8	445.4	474.3	481.2	507.6	513.7	537.0	542.7
December	566.9	583.4	586.8	598.7	601.4	609.0	610.4	613.6	613.9	612.5	611.6

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