

## Analemmatic Sundial

Latitude: 57.0° N/S

Earliest Sunrise: 3:03 a.m.    Latest Sunset: 8:57 p.m.  
 Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 838.7 mm  
 Sunrise/Sunset Markers: X = ± 244.4 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	838.7	838.7	0.0						
11:55	12:05	21.8	838.5	838.8	21.8	8:25	3:35	806.4	495.9	946.7	876.3
11:50	12:10	43.6	837.9	839.0	43.6	8:20	3:40	819.2	481.0	950.0	893.8
11:45	12:15	65.4	836.9	839.4	65.4	8:15	3:45	831.5	465.9	953.1	911.2
11:40	12:20	87.2	835.5	840.0	87.2	8:10	3:50	843.4	450.6	956.2	928.4
11:35	12:25	108.9	833.7	840.8	109.0	8:05	3:55	854.9	435.1	959.3	945.4
11:30	12:30	130.5	831.5	841.7	130.7	8:00	4:00	866.0	419.3	962.2	962.2
11:25	12:35	152.1	828.9	842.8	152.4	7:55	4:05	876.7	403.4	965.1	978.8
11:20	12:40	173.6	825.9	844.0	174.1	7:50	4:10	887.0	387.3	967.9	995.3
11:15	12:45	195.1	822.6	845.4	195.8	7:45	4:15	896.9	370.9	970.6	1011.5
11:10	12:50	216.4	818.8	846.9	217.4	7:40	4:20	906.3	354.4	973.1	1027.6
11:05	12:55	237.7	814.6	848.6	238.9	7:35	4:25	915.3	337.8	975.6	1043.4
11:00	1:00	258.8	810.1	850.4	260.4	7:30	4:30	923.9	320.9	978.0	1059.1
10:55	1:05	279.8	805.2	852.4	281.8	7:25	4:35	932.0	304.0	980.3	1074.5
10:50	1:10	300.7	799.9	854.5	303.2	7:20	4:40	939.7	286.8	982.5	1089.7
10:45	1:15	321.4	794.2	856.7	324.5	7:15	4:45	946.9	269.6	984.6	1104.8
10:40	1:20	342.0	788.1	859.1	345.7	7:10	4:50	953.7	252.2	986.5	1119.6
10:35	1:25	362.4	781.6	861.6	366.9	7:05	4:55	960.0	234.7	988.3	1134.2
10:30	1:30	382.7	774.8	864.2	388.0	7:00	5:00	965.9	217.1	990.0	1148.7
10:25	1:35	402.7	767.6	866.9	409.0	6:55	5:05	971.3	199.3	991.6	1162.9
10:20	1:40	422.6	760.1	869.7	429.9	6:50	5:10	976.3	181.5	993.0	1176.9
10:15	1:45	442.3	752.2	872.6	450.7	6:45	5:15	980.8	163.6	994.3	1190.6
10:10	1:50	461.7	743.9	875.6	471.4	6:40	5:20	984.8	145.6	995.5	1204.2
10:05	1:55	481.0	735.3	878.6	492.0	6:35	5:25	988.4	127.6	996.6	1217.6
10:00	2:00	500.0	726.3	881.8	512.5	6:30	5:30	991.4	109.5	997.5	1230.7
9:55	2:05	518.8	717.0	885.0	532.9	6:25	5:35	994.1	91.3	998.2	1243.7
9:50	2:10	537.3	707.3	888.3	553.1	6:20	5:40	996.2	73.1	998.9	1256.4
9:45	2:15	555.6	697.3	891.6	573.3	6:15	5:45	997.9	54.9	999.4	1268.9
9:40	2:20	573.6	687.0	895.0	593.3	6:10	5:50	999.0	36.6	999.7	1281.2
9:35	2:25	591.3	676.3	898.4	613.2	6:05	5:55	999.8	18.3	999.9	1293.3
9:30	2:30	608.8	665.4	901.8	633.0	6:00	6:00	1000.0	0.0	1000.0	1305.1
9:25	2:35	625.9	654.1	905.3	652.6	5:55	6:05	999.8	-18.3	999.9	1316.8
9:20	2:40	642.8	642.5	908.8	672.1	5:50	6:10	999.0	-36.6	999.7	1328.2
9:15	2:45	659.3	630.5	912.3	691.4	5:45	6:15	997.9	-54.9	999.4	1339.4
9:10	2:50	675.6	618.3	915.8	710.6	5:40	6:20	996.2	-73.1	998.9	1350.5
9:05	2:55	691.5	605.8	919.4	729.7	5:35	6:25	994.1	-91.3	998.2	1361.2
9:00	3:00	707.1	593.0	922.9	748.6	5:30	6:30	991.4	-109.5	997.5	1371.8
8:55	3:05	722.4	580.0	926.4	767.3	5:25	6:35	988.4	-127.6	996.6	1382.2
8:50	3:10	737.3	566.6	929.8	785.9	5:20	6:40	984.8	-145.6	995.5	1392.4
8:45	3:15	751.8	553.0	933.3	804.3	5:15	6:45	980.8	-163.6	994.3	1402.3
8:40	3:20	766.0	539.1	936.7	822.5	5:10	6:50	976.3	-181.5	993.0	1412.1
8:35	3:25	779.9	524.9	940.1	840.6	5:05	6:55	971.3	-199.3	991.6	1421.6
8:30	3:30	793.4	510.6	943.4	858.5	5:00	7:00	965.9	-217.1	990.0	1430.9

## Analemmatic Sundial

Latitude: 57.0° N/S

Earliest Sunrise: 3:03 a.m.    Latest Sunset: 8:57 p.m.  
 Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 838.7 mm  
 Sunrise/Sunset Markers: X = ± 244.4 mm

Local Time		X	Y	Z	W
4:55	7:05	960.0	-234.7	988.3	1440.1
4:50	7:10	953.7	-252.2	986.5	1449.0
4:45	7:15	946.9	-269.6	984.6	1457.7
4:40	7:20	939.7	-286.8	982.5	1466.2
4:35	7:25	932.0	-304.0	980.3	1474.5
4:30	7:30	923.9	-320.9	978.0	1482.7
4:25	7:35	915.3	-337.8	975.6	1490.6
4:20	7:40	906.3	-354.4	973.1	1498.3
4:15	7:45	896.9	-370.9	970.6	1505.8
4:10	7:50	887.0	-387.3	967.9	1513.2
4:05	7:55	876.7	-403.4	965.1	1520.3
4:00	8:00	866.0	-419.3	962.2	1527.3
3:55	8:05	854.9	-435.1	959.3	1534.1
3:50	8:10	843.4	-450.6	956.2	1540.6
3:45	8:15	831.5	-465.9	953.1	1547.0
3:40	8:20	819.2	-481.0	950.0	1553.3
3:35	8:25	806.4	-495.9	946.7	1559.3
3:30	8:30	793.4	-510.6	943.4	1565.2
3:25	8:35	779.9	-524.9	940.1	1570.9
3:20	8:40	766.0	-539.1	936.7	1576.4
3:15	8:45	751.8	-553.0	933.3	1581.8
3:10	8:50	737.3	-566.6	929.8	1586.9
3:05	8:55	722.4	-580.0	926.4	1591.9
3:00	9:00	707.1	-593.0	922.9	1596.8

## Analemmatic Sundial

Latitude: 57.0° N/S

## Date Scale

Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 838.7 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-231.1	-226.7	-225.4	-219.4	-217.6	-210.2	-208.1	-199.2	-196.8	-186.8	-184.1
February	-167.1	-154.9	-151.8	-138.8	-135.6	-122.0	-118.6	-104.6	-101.0	-86.7	-83.0
March	-72.0	-57.2	-53.5	-38.6	-34.8	-19.8	-16.1	-1.0	2.8	17.8	21.5
April	43.8	58.5	62.2	76.5	80.1	94.3	97.7	111.5	114.9	128.1	131.4
May	147.2	159.3	162.2	173.4	176.1	186.5	188.9	198.3	200.6	208.8	210.7
June	220.9	226.3	227.5	231.4	232.3	234.8	235.1	236.0	236.1	234.4	235.2
July	232.3	228.6	227.5	222.5	221.0	214.5	212.8	205.0	203.0	194.2	191.8
August	176.8	165.8	163.0	151.2	148.3	135.9	132.7	119.7	116.5	103.0	99.6
September	78.8	64.6	61.0	46.5	42.9	28.3	24.6	9.9	6.2	-8.7	-12.4
October	-30.8	-45.6	-49.3	-64.0	-67.5	-82.1	-85.7	-99.9	-103.4	-117.3	-120.6
November	-140.5	-153.3	-156.4	-168.4	-171.3	-182.4	-185.1	-195.2	-197.6	-206.6	-208.7
December	-218.1	-224.4	-225.7	-230.3	-231.3	-234.2	-234.8	-236.0	-236.1	-235.6	-235.2

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	231.1	226.7	225.4	219.4	217.6	210.2	208.1	199.2	196.8	186.8	184.1
February	167.1	154.9	151.8	138.8	135.6	122.0	118.6	104.6	101.0	86.7	83.0
March	72.0	57.2	53.5	38.6	34.8	19.8	16.1	1.0	-2.8	-17.8	-21.5
April	-43.8	-58.5	-62.2	-76.5	-80.1	-94.3	-97.7	-111.5	-114.9	-128.1	-131.4
May	-147.2	-159.3	-162.2	-173.4	-176.1	-186.5	-188.9	-198.3	-200.6	-208.8	-210.7
June	-220.9	-226.3	-227.5	-231.4	-232.3	-234.8	-235.1	-236.0	-236.1	-234.4	-235.2
July	-232.3	-228.6	-227.5	-222.5	-221.0	-214.5	-212.8	-205.0	-203.0	-194.2	-191.8
August	-176.8	-165.8	-163.0	-151.2	-148.3	-135.9	-132.7	-119.7	-116.5	-103.0	-99.6
September	-78.8	-64.6	-61.0	-46.5	-42.9	-28.3	-24.6	-9.9	-6.2	8.7	12.4
October	30.8	45.6	49.3	64.0	67.5	82.1	85.7	99.9	103.4	117.3	120.6
November	140.5	153.3	156.4	168.4	171.3	182.4	185.1	195.2	197.6	206.6	208.7
December	218.1	224.4	225.7	230.3	231.3	234.2	234.8	236.0	236.1	235.6	235.2

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: 57.0° N/S

Earliest Sunrise: 3:03 a.m.    Latest Sunset: 8:57 p.m.  
 Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 1258.0 mm  
 Sunrise/Sunset Markers: X = ± 366.6 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1258.0	1258.0	0.0						
11:55	12:05	32.7	1257.7	1258.1	32.7	8:25	3:35	1209.7	743.9	1420.1	1314.4
11:50	12:10	65.4	1256.8	1258.5	65.4	8:20	3:40	1228.7	721.6	1424.9	1340.7
11:45	12:15	98.1	1255.3	1259.1	98.1	8:15	3:45	1247.2	698.9	1429.7	1366.8
11:40	12:20	130.7	1253.2	1260.0	130.8	8:10	3:50	1265.1	675.9	1434.3	1392.6
11:35	12:25	163.3	1250.5	1261.1	163.5	8:05	3:55	1282.4	652.6	1438.9	1418.1
11:30	12:30	195.8	1247.2	1262.5	196.1	8:00	4:00	1299.0	629.0	1443.3	1443.3
11:25	12:35	228.2	1243.4	1264.1	228.7	7:55	4:05	1315.1	605.1	1447.6	1468.3
11:20	12:40	260.5	1238.9	1266.0	261.2	7:50	4:10	1330.5	580.9	1451.8	1492.9
11:15	12:45	292.6	1233.8	1268.1	293.6	7:45	4:15	1345.3	556.4	1455.8	1517.3
11:10	12:50	324.7	1228.2	1270.4	326.0	7:40	4:20	1359.5	531.7	1459.7	1541.3
11:05	12:55	356.5	1222.0	1272.9	358.3	7:35	4:25	1373.0	506.7	1463.5	1565.1
11:00	1:00	388.2	1215.1	1275.7	390.6	7:30	4:30	1385.8	481.4	1467.1	1588.6
10:55	1:05	419.7	1207.7	1278.6	422.7	7:25	4:35	1398.0	455.9	1470.5	1611.7
10:50	1:10	451.1	1199.8	1281.8	454.8	7:20	4:40	1409.5	430.3	1473.7	1634.6
10:45	1:15	482.2	1191.2	1285.1	486.8	7:15	4:45	1420.4	404.4	1476.8	1657.2
10:40	1:20	513.0	1182.1	1288.7	518.6	7:10	4:50	1430.6	378.3	1479.7	1679.4
10:35	1:25	543.7	1172.5	1292.4	550.3	7:05	4:55	1440.1	352.0	1482.5	1701.4
10:30	1:30	574.0	1162.2	1296.3	582.0	7:00	5:00	1448.9	325.6	1485.0	1723.0
10:25	1:35	604.1	1151.5	1300.3	613.4	6:55	5:05	1457.0	299.0	1487.4	1744.3
10:20	1:40	633.9	1140.1	1304.5	644.8	6:50	5:10	1464.4	272.3	1489.5	1765.3
10:15	1:45	663.4	1128.3	1308.9	676.0	6:45	5:15	1471.2	245.4	1491.5	1786.0
10:10	1:50	692.6	1115.9	1313.3	707.1	6:40	5:20	1477.2	218.5	1493.3	1806.3
10:05	1:55	721.5	1102.9	1317.9	738.0	6:35	5:25	1482.5	191.4	1494.8	1826.4
10:00	2:00	750.0	1089.5	1322.7	768.7	6:30	5:30	1487.2	164.2	1496.2	1846.1
9:55	2:05	778.2	1075.5	1327.5	799.3	6:25	5:35	1491.1	137.0	1497.4	1865.5
9:50	2:10	805.9	1061.0	1332.4	829.7	6:20	5:40	1494.3	109.6	1498.3	1884.6
9:45	2:15	833.4	1046.0	1337.4	859.9	6:15	5:45	1496.8	82.3	1499.0	1903.3
9:40	2:20	860.4	1030.5	1342.4	889.9	6:10	5:50	1498.6	54.9	1499.6	1921.8
9:35	2:25	887.0	1014.5	1347.6	919.8	6:05	5:55	1499.6	27.4	1499.9	1939.9
9:30	2:30	913.1	998.0	1352.7	949.4	6:00	6:00	1500.0	0.0	1500.0	1957.7
9:25	2:35	938.9	981.1	1358.0	978.9	5:55	6:05	1499.6	-27.4	1499.9	1975.2
9:20	2:40	964.2	963.7	1363.2	1008.1	5:50	6:10	1498.6	-54.9	1499.6	1992.3
9:15	2:45	989.0	945.8	1368.5	1037.1	5:45	6:15	1496.8	-82.3	1499.0	2009.2
9:10	2:50	1013.4	927.5	1373.8	1065.9	5:40	6:20	1494.3	-109.6	1498.3	2025.7
9:05	2:55	1037.3	908.7	1379.0	1094.5	5:35	6:25	1491.1	-137.0	1497.4	2041.9
9:00	3:00	1060.7	889.5	1384.3	1122.8	5:30	6:30	1487.2	-164.2	1496.2	2057.8
8:55	3:05	1083.5	869.9	1389.5	1150.9	5:25	6:35	1482.5	-191.4	1494.8	2073.3
8:50	3:10	1105.9	849.9	1394.8	1178.8	5:20	6:40	1477.2	-218.5	1493.3	2088.6
8:45	3:15	1127.8	829.5	1399.9	1206.4	5:15	6:45	1471.2	-245.4	1491.5	2103.5
8:40	3:20	1149.1	808.6	1405.1	1233.8	5:10	6:50	1464.4	-272.3	1489.5	2118.1
8:35	3:25	1169.8	787.4	1410.1	1260.9	5:05	6:55	1457.0	-299.0	1487.4	2132.4
8:30	3:30	1190.0	765.8	1415.2	1287.8	5:00	7:00	1448.9	-325.6	1485.0	2146.4

## Analemmatic Sundial

Latitude: 57.0° N/S

Earliest Sunrise: 3:03 a.m.    Latest Sunset: 8:57 p.m.  
 Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 1258.0 mm  
 Sunrise/Sunset Markers: X = ± 366.6 mm

Local Time		X	Y	Z	W
4:55	7:05	1440.1	-352.0	1482.5	2160.1
4:50	7:10	1430.6	-378.3	1479.7	2173.5
4:45	7:15	1420.4	-404.4	1476.8	2186.6
4:40	7:20	1409.5	-430.3	1473.7	2199.3
4:35	7:25	1398.0	-455.9	1470.5	2211.8
4:30	7:30	1385.8	-481.4	1467.1	2224.0
4:25	7:35	1373.0	-506.7	1463.5	2235.9
4:20	7:40	1359.5	-531.7	1459.7	2247.4
4:15	7:45	1345.3	-556.4	1455.8	2258.7
4:10	7:50	1330.5	-580.9	1451.8	2269.8
4:05	7:55	1315.1	-605.1	1447.6	2280.5
4:00	8:00	1299.0	-629.0	1443.3	2290.9
3:55	8:05	1282.4	-652.6	1438.9	2301.1
3:50	8:10	1265.1	-675.9	1434.3	2311.0
3:45	8:15	1247.2	-698.9	1429.7	2320.6
3:40	8:20	1228.7	-721.6	1424.9	2329.9
3:35	8:25	1209.7	-743.9	1420.1	2339.0
3:30	8:30	1190.0	-765.8	1415.2	2347.8
3:25	8:35	1169.8	-787.4	1410.1	2356.3
3:20	8:40	1149.1	-808.6	1405.1	2364.6
3:15	8:45	1127.8	-829.5	1399.9	2372.6
3:10	8:50	1105.9	-849.9	1394.8	2380.4
3:05	8:55	1083.5	-869.9	1389.5	2387.9
3:00	9:00	1060.7	-889.5	1384.3	2395.2

## Analemmatic Sundial

Latitude: 57.0° N/S

## Date Scale

Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 1258.0 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-346.6	-340.1	-338.1	-329.1	-326.4	-315.2	-312.1	-298.8	-295.3	-280.2	-276.2
February	-250.7	-232.4	-227.6	-208.2	-203.4	-183.1	-177.8	-156.9	-151.6	-130.0	-124.4
March	-108.0	-85.9	-80.2	-57.8	-52.3	-29.7	-24.1	-1.4	4.1	26.7	32.2
April	65.7	87.7	93.2	114.8	120.2	141.4	146.6	167.3	172.3	192.2	197.0
May	220.7	238.9	243.2	260.1	264.2	279.7	283.4	297.5	300.9	313.3	316.1
June	331.4	339.4	341.2	347.1	348.5	352.2	352.7	354.0	354.2	351.7	352.9
July	348.5	342.9	341.2	333.7	331.6	321.8	319.2	307.6	304.5	291.2	287.7
August	265.1	248.7	244.5	226.9	222.4	203.8	199.0	179.6	174.7	154.5	149.4
September	118.2	96.8	91.5	69.8	64.3	42.4	37.0	14.8	9.3	-13.0	-18.5
October	-46.2	-68.5	-73.9	-96.0	-101.3	-123.1	-128.5	-149.8	-155.1	-175.9	-181.0
November	-210.8	-229.9	-234.6	-252.6	-257.0	-273.7	-277.6	-292.8	-296.4	-309.8	-313.1
December	-327.1	-336.6	-338.6	-345.4	-346.9	-351.3	-352.2	-354.0	-354.2	-353.4	-352.9

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	346.6	340.1	338.1	329.1	326.4	315.2	312.1	298.8	295.3	280.2	276.2
February	250.7	232.4	227.6	208.2	203.4	183.1	177.8	156.9	151.6	130.0	124.4
March	108.0	85.9	80.2	57.8	52.3	29.7	24.1	1.4	-4.1	-26.7	-32.2
April	-65.7	-87.7	-93.2	-114.8	-120.2	-141.4	-146.6	-167.3	-172.3	-192.2	-197.0
May	-220.7	-238.9	-243.2	-260.1	-264.2	-279.7	-283.4	-297.5	-300.9	-313.3	-316.1
June	-331.4	-339.4	-341.2	-347.1	-348.5	-352.2	-352.7	-354.0	-354.2	-351.7	-352.9
July	-348.5	-342.9	-341.2	-333.7	-331.6	-321.8	-319.2	-307.6	-304.5	-291.2	-287.7
August	-265.1	-248.7	-244.5	-226.9	-222.4	-203.8	-199.0	-179.6	-174.7	-154.5	-149.4
September	-118.2	-96.8	-91.5	-69.8	-64.3	-42.4	-37.0	-14.8	-9.3	13.0	18.5
October	46.2	68.5	73.9	96.0	101.3	123.1	128.5	149.8	155.1	175.9	181.0
November	210.8	229.9	234.6	252.6	257.0	273.7	277.6	292.8	296.4	309.8	313.1
December	327.1	336.6	338.6	345.4	346.9	351.3	352.2	354.0	354.2	353.4	352.9

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: 57.0° N/S

Earliest Sunrise: 3:03 a.m.    Latest Sunset: 8:57 p.m.  
 Semi-Major Axis (E-W): 2000 mm    Semi-Minor Axis (N-S): 1677.3 mm  
 Sunrise/Sunset Markers: X = ± 488.9 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1677.3	1677.3	0.0						
11:55	12:05	43.6	1676.9	1677.5	43.6	8:25	3:35	1612.9	991.8	1893.4	1752.5
11:50	12:10	87.2	1675.7	1678.0	87.3	8:20	3:40	1638.3	962.1	1899.9	1787.6
11:45	12:15	130.8	1673.7	1678.9	130.9	8:15	3:45	1662.9	931.9	1906.2	1822.4
11:40	12:20	174.3	1671.0	1680.0	174.4	8:10	3:50	1686.8	901.2	1912.4	1856.8
11:35	12:25	217.7	1667.4	1681.5	218.0	8:05	3:55	1709.8	870.2	1918.5	1890.8
11:30	12:30	261.1	1663.0	1683.4	261.4	8:00	4:00	1732.1	838.7	1924.4	1924.4
11:25	12:35	304.2	1657.8	1685.5	304.9	7:55	4:05	1753.5	806.8	1930.2	1957.7
11:20	12:40	347.3	1651.9	1688.0	348.2	7:50	4:10	1774.0	774.5	1935.7	1990.5
11:15	12:45	390.2	1645.1	1690.7	391.5	7:45	4:15	1793.7	741.9	1941.1	2023.0
11:10	12:50	432.9	1637.6	1693.8	434.7	7:40	4:20	1812.6	708.9	1946.3	2055.1
11:05	12:55	475.4	1629.3	1697.2	477.8	7:35	4:25	1830.6	675.5	1951.3	2086.8
11:00	1:00	517.6	1620.2	1700.9	520.8	7:30	4:30	1847.8	641.9	1956.1	2118.1
10:55	1:05	559.7	1610.3	1704.8	563.7	7:25	4:35	1864.0	607.9	1960.6	2149.0
10:50	1:10	601.4	1599.7	1709.0	606.4	7:20	4:40	1879.4	573.7	1965.0	2179.5
10:45	1:15	642.9	1588.3	1713.5	649.0	7:15	4:45	1893.9	539.2	1969.1	2209.6
10:40	1:20	684.0	1576.2	1718.2	691.5	7:10	4:50	1907.4	504.4	1973.0	2239.2
10:35	1:25	724.9	1563.3	1723.2	733.8	7:05	4:55	1920.1	469.4	1976.6	2268.5
10:30	1:30	765.4	1549.7	1728.4	775.9	7:00	5:00	1931.9	434.1	1980.0	2297.3
10:25	1:35	805.5	1535.3	1733.8	817.9	6:55	5:05	1942.7	398.7	1983.2	2325.7
10:20	1:40	845.2	1520.2	1739.4	859.7	6:50	5:10	1952.6	363.0	1986.1	2353.7
10:15	1:45	884.6	1504.4	1745.2	901.3	6:45	5:15	1961.6	327.2	1988.7	2381.3
10:10	1:50	923.5	1487.8	1751.1	942.7	6:40	5:20	1969.6	291.3	1991.0	2408.4
10:05	1:55	962.0	1470.6	1757.3	983.9	6:35	5:25	1976.7	255.2	1993.1	2435.2
10:00	2:00	1000.0	1452.6	1763.5	1024.9	6:30	5:30	1982.9	218.9	1994.9	2461.5
9:55	2:05	1037.5	1434.0	1770.0	1065.7	6:25	5:35	1988.1	182.6	1996.5	2487.3
9:50	2:10	1074.6	1414.7	1776.5	1106.2	6:20	5:40	1992.4	146.2	1997.7	2512.8
9:45	2:15	1111.1	1394.7	1783.2	1146.5	6:15	5:45	1995.7	109.7	1998.7	2537.8
9:40	2:20	1147.2	1374.0	1789.9	1186.6	6:10	5:50	1998.1	73.2	1999.4	2562.4
9:35	2:25	1182.6	1352.7	1796.8	1226.4	6:05	5:55	1999.5	36.6	1999.9	2586.5
9:30	2:30	1217.5	1330.7	1803.7	1265.9	6:00	6:00	2000.0	0.0	2000.0	2610.3
9:25	2:35	1251.8	1308.1	1810.6	1305.2	5:55	6:05	1999.5	-36.6	1999.9	2633.6
9:20	2:40	1285.6	1284.9	1817.6	1344.1	5:50	6:10	1998.1	-73.2	1999.4	2656.4
9:15	2:45	1318.7	1261.1	1824.6	1382.8	5:45	6:15	1995.7	-109.7	1998.7	2678.9
9:10	2:50	1351.2	1236.7	1831.7	1421.2	5:40	6:20	1992.4	-146.2	1997.7	2700.9
9:05	2:55	1383.0	1211.7	1838.7	1459.3	5:35	6:25	1988.1	-182.6	1996.5	2722.5
9:00	3:00	1414.2	1186.1	1845.7	1497.1	5:30	6:30	1982.9	-218.9	1994.9	2743.7
8:55	3:05	1444.7	1159.9	1852.7	1534.6	5:25	6:35	1976.7	-255.2	1993.1	2764.4
8:50	3:10	1474.6	1133.2	1859.7	1571.8	5:20	6:40	1969.6	-291.3	1991.0	2784.7
8:45	3:15	1503.7	1105.9	1866.6	1608.6	5:15	6:45	1961.6	-327.2	1988.7	2804.7
8:40	3:20	1532.1	1078.2	1873.4	1645.1	5:10	6:50	1952.6	-363.0	1986.1	2824.1
8:35	3:25	1559.8	1049.9	1880.2	1681.2	5:05	6:55	1942.7	-398.7	1983.2	2843.2
8:30	3:30	1586.7	1021.1	1886.9	1717.1	5:00	7:00	1931.9	-434.1	1980.0	2861.9

## Analemmatic Sundial

Latitude: 57.0° N/S

Earliest Sunrise: 3:03 a.m.    Latest Sunset: 8:57 p.m.  
 Semi-Major Axis (E-W): 2000 mm    Semi-Minor Axis (N-S): 1677.3 mm  
 Sunrise/Sunset Markers: X = ± 488.9 mm

Local Time		X	Y	Z	W
4:55	7:05	1920.1	-469.4	1976.6	2880.1
4:50	7:10	1907.4	-504.4	1973.0	2898.0
4:45	7:15	1893.9	-539.2	1969.1	2915.4
4:40	7:20	1879.4	-573.7	1965.0	2932.4
4:35	7:25	1864.0	-607.9	1960.6	2949.1
4:30	7:30	1847.8	-641.9	1956.1	2965.3
4:25	7:35	1830.6	-675.5	1951.3	2981.1
4:20	7:40	1812.6	-708.9	1946.3	2996.6
4:15	7:45	1793.7	-741.9	1941.1	3011.7
4:10	7:50	1774.0	-774.5	1935.7	3026.3
4:05	7:55	1753.5	-806.8	1930.2	3040.6
4:00	8:00	1732.1	-838.7	1924.4	3054.6
3:55	8:05	1709.8	-870.2	1918.5	3068.1
3:50	8:10	1686.8	-901.2	1912.4	3081.3
3:45	8:15	1662.9	-931.9	1906.2	3094.1
3:40	8:20	1638.3	-962.1	1899.9	3106.5
3:35	8:25	1612.9	-991.8	1893.4	3118.6
3:30	8:30	1586.7	-1021.1	1886.9	3130.4
3:25	8:35	1559.8	-1049.9	1880.2	3141.8
3:20	8:40	1532.1	-1078.2	1873.4	3152.8
3:15	8:45	1503.7	-1105.9	1866.6	3163.5
3:10	8:50	1474.6	-1133.2	1859.7	3173.9
3:05	8:55	1444.7	-1159.9	1852.7	3183.9
3:00	9:00	1414.2	-1186.1	1845.7	3193.6

## Analematic Sundial

Latitude: 57.0° N/S

## Date Scale

Semi-Major Axis (E-W): 2000 mm    Semi-Minor Axis (N-S): 1677.3 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-462.1	-453.4	-450.7	-438.8	-435.2	-420.3	-416.2	-398.4	-393.7	-373.6	-368.3
February	-334.3	-309.9	-303.5	-277.7	-271.2	-244.1	-237.1	-209.2	-202.1	-173.3	-165.9
March	-144.0	-114.5	-107.0	-77.1	-69.7	-39.6	-32.1	-1.9	5.5	35.6	43.0
April	87.6	117.0	124.3	153.1	160.3	188.5	195.4	223.0	229.7	256.3	262.7
May	294.3	318.5	324.3	346.8	352.2	372.9	377.8	396.7	401.2	417.7	421.4
June	441.9	452.5	455.0	462.8	464.6	469.6	470.2	472.1	472.3	468.9	470.5
July	464.6	457.2	455.0	445.0	442.1	429.1	425.6	410.1	406.0	388.3	383.6
August	353.5	331.6	326.0	302.5	296.6	271.8	265.3	239.5	232.9	206.0	199.1
September	157.5	129.1	122.0	93.0	85.7	56.5	49.3	19.8	12.4	-17.3	-24.7
October	-61.7	-91.3	-98.6	-128.0	-135.1	-164.2	-171.4	-199.7	-206.8	-234.5	-241.3
November	-281.1	-306.6	-312.8	-336.8	-342.6	-364.9	-370.2	-390.4	-395.2	-413.1	-417.5
December	-436.1	-448.7	-451.4	-460.6	-462.6	-468.4	-469.6	-472.1	-472.3	-471.1	-470.5

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	462.1	453.4	450.7	438.8	435.2	420.3	416.2	398.4	393.7	373.6	368.3
February	334.3	309.9	303.5	277.7	271.2	244.1	237.1	209.2	202.1	173.3	165.9
March	144.0	114.5	107.0	77.1	69.7	39.6	32.1	1.9	-5.5	-35.6	-43.0
April	-87.6	-117.0	-124.3	-153.1	-160.3	-188.5	-195.4	-223.0	-229.7	-256.3	-262.7
May	-294.3	-318.5	-324.3	-346.8	-352.2	-372.9	-377.8	-396.7	-401.2	-417.7	-421.4
June	-441.9	-452.5	-455.0	-462.8	-464.6	-469.6	-470.2	-472.1	-472.3	-468.9	-470.5
July	-464.6	-457.2	-455.0	-445.0	-442.1	-429.1	-425.6	-410.1	-406.0	-388.3	-383.6
August	-353.5	-331.6	-326.0	-302.5	-296.6	-271.8	-265.3	-239.5	-232.9	-206.0	-199.1
September	-157.5	-129.1	-122.0	-93.0	-85.7	-56.5	-49.3	-19.8	-12.4	17.3	24.7
October	61.7	91.3	98.6	128.0	135.1	164.2	171.4	199.7	206.8	234.5	241.3
November	281.1	306.6	312.8	336.8	342.6	364.9	370.2	390.4	395.2	413.1	417.5
December	436.1	448.7	451.4	460.6	462.6	468.4	469.6	472.1	472.3	471.1	470.5

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: 57.0° N/S

Earliest Sunrise: 3:03 a.m. Latest Sunset: 8:57 p.m.  
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 2096.7 mm  
 Sunrise/Sunset Markers: X = ± 611.1 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	2096.7	2096.7	0.0						
11:55	12:05	54.5	2096.2	2096.9	54.5	8:25	3:35	2016.1	1239.8	2366.8	2190.7
11:50	12:10	109.0	2094.7	2097.5	109.1	8:20	3:40	2047.9	1202.6	2374.9	2234.5
11:45	12:15	163.5	2092.2	2098.6	163.6	8:15	3:45	2078.7	1164.9	2382.8	2278.0
11:40	12:20	217.9	2088.7	2100.0	218.0	8:10	3:50	2108.5	1126.5	2390.6	2321.0
11:35	12:25	272.2	2084.2	2101.9	272.5	8:05	3:55	2137.3	1087.7	2398.1	2363.5
11:30	12:30	326.3	2078.7	2104.2	326.8	8:00	4:00	2165.1	1048.3	2405.5	2405.5
11:25	12:35	380.3	2072.3	2106.9	381.1	7:55	4:05	2191.8	1008.5	2412.7	2447.1
11:20	12:40	434.1	2064.8	2110.0	435.3	7:50	4:10	2217.5	968.1	2419.7	2488.2
11:15	12:45	487.7	2056.4	2113.4	489.4	7:45	4:15	2242.2	927.3	2426.4	2528.8
11:10	12:50	541.1	2047.0	2117.3	543.4	7:40	4:20	2265.8	886.1	2432.9	2568.9
11:05	12:55	594.2	2036.6	2121.5	597.2	7:35	4:25	2288.3	844.4	2439.1	2608.5
11:00	1:00	647.0	2025.2	2126.1	651.0	7:30	4:30	2309.7	802.4	2445.1	2647.6
10:55	1:05	699.6	2012.9	2131.0	704.6	7:25	4:35	2330.0	759.9	2450.8	2686.2
10:50	1:10	751.8	1999.6	2136.3	758.0	7:20	4:40	2349.2	717.1	2456.2	2724.4
10:45	1:15	803.6	1985.4	2141.9	811.3	7:15	4:45	2367.3	674.0	2461.4	2761.9
10:40	1:20	855.1	1970.2	2147.8	864.3	7:10	4:50	2384.3	630.5	2466.2	2799.0
10:35	1:25	906.1	1954.1	2154.0	917.2	7:05	4:55	2400.1	586.7	2470.8	2835.6
10:30	1:30	956.7	1937.1	2160.5	969.9	7:00	5:00	2414.8	542.7	2475.0	2871.6
10:25	1:35	1006.9	1919.1	2167.2	1022.4	6:55	5:05	2428.4	498.4	2479.0	2907.2
10:20	1:40	1056.5	1900.2	2174.2	1074.7	6:50	5:10	2440.7	453.8	2482.6	2942.1
10:15	1:45	1105.7	1880.5	2181.4	1126.7	6:45	5:15	2452.0	409.0	2485.8	2976.6
10:10	1:50	1154.4	1859.8	2188.9	1178.4	6:40	5:20	2462.0	364.1	2488.8	3010.6
10:05	1:55	1202.5	1838.2	2196.6	1229.9	6:35	5:25	2470.9	319.0	2491.4	3044.0
10:00	2:00	1250.0	1815.8	2204.4	1281.2	6:30	5:30	2478.6	273.7	2493.7	3076.8
9:55	2:05	1296.9	1792.5	2212.5	1332.1	6:25	5:35	2485.1	228.3	2495.6	3109.2
9:50	2:10	1343.2	1768.3	2220.6	1382.8	6:20	5:40	2490.5	182.7	2497.2	3141.0
9:45	2:15	1388.9	1743.3	2229.0	1433.2	6:15	5:45	2494.6	137.1	2498.4	3172.2
9:40	2:20	1433.9	1717.5	2237.4	1483.2	6:10	5:50	2497.6	91.5	2499.3	3203.0
9:35	2:25	1478.3	1690.9	2245.9	1533.0	6:05	5:55	2499.4	45.7	2499.8	3233.2
9:30	2:30	1521.9	1663.4	2254.6	1582.4	6:00	6:00	2500.0	0.0	2500.0	3262.8
9:25	2:35	1564.8	1635.2	2263.3	1631.4	5:55	6:05	2499.4	-45.7	2499.8	3292.0
9:20	2:40	1607.0	1606.1	2272.0	1680.2	5:50	6:10	2497.6	-91.5	2499.3	3320.5
9:15	2:45	1648.4	1576.4	2280.8	1728.5	5:45	6:15	2494.6	-137.1	2498.4	3348.6
9:10	2:50	1689.0	1545.8	2289.6	1776.5	5:40	6:20	2490.5	-182.7	2497.2	3376.1
9:05	2:55	1728.8	1514.6	2298.4	1824.2	5:35	6:25	2485.1	-228.3	2495.6	3403.1
9:00	3:00	1767.8	1482.6	2307.2	1871.4	5:30	6:30	2478.6	-273.7	2493.7	3429.6
8:55	3:05	1805.9	1449.9	2315.9	1918.2	5:25	6:35	2470.9	-319.0	2491.4	3455.5
8:50	3:10	1843.2	1416.5	2324.6	1964.7	5:20	6:40	2462.0	-364.1	2488.8	3480.9
8:45	3:15	1879.6	1382.4	2333.2	2010.7	5:15	6:45	2452.0	-409.0	2485.8	3505.8
8:40	3:20	1915.1	1347.7	2341.8	2056.4	5:10	6:50	2440.7	-453.8	2482.6	3530.2
8:35	3:25	1949.7	1312.4	2350.2	2101.6	5:05	6:55	2428.4	-498.4	2479.0	3554.0
8:30	3:30	1983.4	1276.4	2358.6	2146.3	5:00	7:00	2414.8	-542.7	2475.0	3577.3

## Analemmatic Sundial

Latitude: 57.0° N/S

Earliest Sunrise: 3:03 a.m.    Latest Sunset: 8:57 p.m.  
 Semi-Major Axis (E-W): 2500 mm    Semi-Minor Axis (N-S): 2096.7 mm  
 Sunrise/Sunset Markers: X = ± 611.1 mm

Local Time		X	Y	Z	W
4:55	7:05	2400.1	-586.7	2470.8	3600.2
4:50	7:10	2384.3	-630.5	2466.2	3622.5
4:45	7:15	2367.3	-674.0	2461.4	3644.3
4:40	7:20	2349.2	-717.1	2456.2	3665.6
4:35	7:25	2330.0	-759.9	2450.8	3686.3
4:30	7:30	2309.7	-802.4	2445.1	3706.6
4:25	7:35	2288.3	-844.4	2439.1	3726.4
4:20	7:40	2265.8	-886.1	2432.9	3745.7
4:15	7:45	2242.2	-927.3	2426.4	3764.6
4:10	7:50	2217.5	-968.1	2419.7	3782.9
4:05	7:55	2191.8	-1008.5	2412.7	3800.8
4:00	8:00	2165.1	-1048.3	2405.5	3818.2
3:55	8:05	2137.3	-1087.7	2398.1	3835.1
3:50	8:10	2108.5	-1126.5	2390.6	3851.6
3:45	8:15	2078.7	-1164.9	2382.8	3867.6
3:40	8:20	2047.9	-1202.6	2374.9	3883.2
3:35	8:25	2016.1	-1239.8	2366.8	3898.3
3:30	8:30	1983.4	-1276.4	2358.6	3913.0
3:25	8:35	1949.7	-1312.4	2350.2	3927.2
3:20	8:40	1915.1	-1347.7	2341.8	3941.0
3:15	8:45	1879.6	-1382.4	2333.2	3954.4
3:10	8:50	1843.2	-1416.5	2324.6	3967.3
3:05	8:55	1805.9	-1449.9	2315.9	3979.9
3:00	9:00	1767.8	-1482.6	2307.2	3992.0

**Analematic Sundial**

Latitude: 57.0° N/S

**Date Scale**

Semi-Major Axis (E-W): 2500 mm    Semi-Minor Axis (N-S): 2096.7 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-577.7	-566.8	-563.4	-548.5	-544.0	-525.4	-520.2	-498.0	-492.1	-467.0	-460.3
February	-417.8	-387.3	-379.4	-347.1	-339.0	-305.1	-296.4	-261.5	-252.6	-216.6	-207.4
March	-180.0	-143.1	-133.7	-96.4	-87.1	-49.5	-40.2	-2.4	6.9	44.5	53.7
April	109.6	146.2	155.4	191.4	200.3	235.7	244.3	278.8	287.2	320.4	328.4
May	367.9	398.2	405.4	433.5	440.3	466.2	472.3	495.9	501.5	522.1	526.8
June	552.3	565.7	568.7	578.5	580.8	587.0	587.8	590.1	590.3	586.1	588.1
July	580.8	571.5	568.7	556.2	552.6	536.3	532.0	512.6	507.5	485.4	479.5
August	441.9	414.5	407.5	378.1	370.7	339.7	331.7	299.4	291.2	257.5	248.9
September	196.9	161.4	152.5	116.3	107.2	70.6	61.6	24.7	15.4	-21.6	-30.9
October	-77.1	-114.1	-123.2	-160.0	-168.9	-205.2	-214.2	-249.7	-258.5	-293.1	-301.6
November	-351.4	-383.2	-390.9	-421.0	-428.3	-456.1	-462.7	-488.1	-494.0	-516.4	-521.9
December	-545.2	-560.9	-564.3	-575.7	-578.2	-585.6	-587.0	-590.1	-590.3	-588.9	-588.1

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	577.7	566.8	563.4	548.5	544.0	525.4	520.2	498.0	492.1	467.0	460.3
February	417.8	387.3	379.4	347.1	339.0	305.1	296.4	261.5	252.6	216.6	207.4
March	180.0	143.1	133.7	96.4	87.1	49.5	40.2	2.4	-6.9	-44.5	-53.7
April	-109.6	-146.2	-155.4	-191.4	-200.3	-235.7	-244.3	-278.8	-287.2	-320.4	-328.4
May	-367.9	-398.2	-405.4	-433.5	-440.3	-466.2	-472.3	-495.9	-501.5	-522.1	-526.8
June	-552.3	-565.7	-568.7	-578.5	-580.8	-587.0	-587.8	-590.1	-590.3	-586.1	-588.1
July	-580.8	-571.5	-568.7	-556.2	-552.6	-536.3	-532.0	-512.6	-507.5	-485.4	-479.5
August	-441.9	-414.5	-407.5	-378.1	-370.7	-339.7	-331.7	-299.4	-291.2	-257.5	-248.9
September	-196.9	-161.4	-152.5	-116.3	-107.2	-70.6	-61.6	-24.7	-15.4	21.6	30.9
October	77.1	114.1	123.2	160.0	168.9	205.2	214.2	249.7	258.5	293.1	301.6
November	351.4	383.2	390.9	421.0	428.3	456.1	462.7	488.1	494.0	516.4	521.9
December	545.2	560.9	564.3	575.7	578.2	585.6	587.0	590.1	590.3	588.9	588.1

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