

## Analemmatic Sundial

Latitude: 57.5° N/S

Earliest Sunrise: 2:59 a.m.    Latest Sunset: 9:01 p.m.  
 Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 843.4 mm  
 Sunrise/Sunset Markers: X = ± 235.7 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	843.4	843.4	0.0						
11:55	12:05	21.8	843.2	843.5	21.8	8:25	3:35	806.4	498.7	948.2	877.0
11:50	12:10	43.6	842.6	843.7	43.6	8:20	3:40	819.2	483.7	951.3	894.6
11:45	12:15	65.4	841.6	844.1	65.4	8:15	3:45	831.5	468.6	954.4	912.1
11:40	12:20	87.2	840.2	844.7	87.2	8:10	3:50	843.4	453.2	957.4	929.3
11:35	12:25	108.9	838.4	845.4	109.0	8:05	3:55	854.9	437.5	960.4	946.4
11:30	12:30	130.5	836.2	846.3	130.7	8:00	4:00	866.0	421.7	963.2	963.2
11:25	12:35	152.1	833.6	847.3	152.4	7:55	4:05	876.7	405.7	966.0	979.9
11:20	12:40	173.6	830.6	848.5	174.1	7:50	4:10	887.0	389.4	968.7	996.4
11:15	12:45	195.1	827.2	849.9	195.8	7:45	4:15	896.9	373.0	971.4	1012.7
11:10	12:50	216.4	823.4	851.4	217.4	7:40	4:20	906.3	356.4	973.9	1028.8
11:05	12:55	237.7	819.2	853.0	238.9	7:35	4:25	915.3	339.7	976.3	1044.8
11:00	1:00	258.8	814.7	854.8	260.4	7:30	4:30	923.9	322.8	978.6	1060.5
10:55	1:05	279.8	809.7	856.7	281.9	7:25	4:35	932.0	305.7	980.9	1076.0
10:50	1:10	300.7	804.4	858.7	303.2	7:20	4:40	939.7	288.5	983.0	1091.3
10:45	1:15	321.4	798.6	860.9	324.5	7:15	4:45	946.9	271.1	985.0	1106.4
10:40	1:20	342.0	792.5	863.2	345.8	7:10	4:50	953.7	253.6	986.9	1121.3
10:35	1:25	362.4	786.0	865.6	366.9	7:05	4:55	960.0	236.0	988.6	1136.1
10:30	1:30	382.7	779.2	868.1	388.0	7:00	5:00	965.9	218.3	990.3	1150.6
10:25	1:35	402.7	772.0	870.7	409.0	6:55	5:05	971.3	200.5	991.8	1164.8
10:20	1:40	422.6	764.4	873.4	429.9	6:50	5:10	976.3	182.5	993.2	1178.9
10:15	1:45	442.3	756.4	876.2	450.8	6:45	5:15	980.8	164.5	994.5	1192.8
10:10	1:50	461.7	748.1	879.1	471.5	6:40	5:20	984.8	146.5	995.6	1206.5
10:05	1:55	481.0	739.4	882.1	492.1	6:35	5:25	988.4	128.3	996.7	1219.9
10:00	2:00	500.0	730.4	885.1	512.6	6:30	5:30	991.4	110.1	997.5	1233.2
9:55	2:05	518.8	721.0	888.3	533.0	6:25	5:35	994.1	91.8	998.3	1246.2
9:50	2:10	537.3	711.3	891.4	553.3	6:20	5:40	996.2	73.5	998.9	1259.0
9:45	2:15	555.6	701.3	894.7	573.5	6:15	5:45	997.9	55.2	999.4	1271.6
9:40	2:20	573.6	690.9	897.9	593.5	6:10	5:50	999.0	36.8	999.7	1284.0
9:35	2:25	591.3	680.1	901.2	613.4	6:05	5:55	999.8	18.4	999.9	1296.2
9:30	2:30	608.8	669.1	904.6	633.2	6:00	6:00	1000.0	0.0	1000.0	1308.2
9:25	2:35	625.9	657.7	908.0	652.9	5:55	6:05	999.8	-18.4	999.9	1319.9
9:20	2:40	642.8	646.1	911.4	672.4	5:50	6:10	999.0	-36.8	999.7	1331.5
9:15	2:45	659.3	634.1	914.8	691.8	5:45	6:15	997.9	-55.2	999.4	1342.8
9:10	2:50	675.6	621.8	918.2	711.0	5:40	6:20	996.2	-73.5	998.9	1353.9
9:05	2:55	691.5	609.2	921.6	730.1	5:35	6:25	994.1	-91.8	998.3	1364.8
9:00	3:00	707.1	596.4	925.0	749.0	5:30	6:30	991.4	-110.1	997.5	1375.5
8:55	3:05	722.4	583.2	928.4	767.8	5:25	6:35	988.4	-128.3	996.7	1386.0
8:50	3:10	737.3	569.8	931.8	786.4	5:20	6:40	984.8	-146.5	995.6	1396.3
8:45	3:15	751.8	556.1	935.1	804.9	5:15	6:45	980.8	-164.5	994.5	1406.4
8:40	3:20	766.0	542.1	938.5	823.2	5:10	6:50	976.3	-182.5	993.2	1416.2
8:35	3:25	779.9	527.9	941.8	841.3	5:05	6:55	971.3	-200.5	991.8	1425.9
8:30	3:30	793.4	513.4	945.0	859.2	5:00	7:00	965.9	-218.3	990.3	1435.3

## Analemmatic Sundial

Latitude: 57.5° N/S

Earliest Sunrise: 2:59 a.m.    Latest Sunset: 9:01 p.m.  
 Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 843.4 mm  
 Sunrise/Sunset Markers:  $X = \pm 235.7$  mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
4:55	7:05	960.0	-236.0	988.6	1444.6	2:55	9:05	691.5	-609.2	921.6	1608.8
4:50	7:10	953.7	-253.6	986.9	1453.6	2:50	9:10	675.6	-621.8	918.2	1613.5
4:45	7:15	946.9	-271.1	985.0	1462.5	2:45	9:15	659.3	-634.1	914.8	1617.9
4:40	7:20	939.7	-288.5	983.0	1471.1						
4:35	7:25	932.0	-305.7	980.9	1479.5						
4:30	7:30	923.9	-322.8	978.6	1487.8						
4:25	7:35	915.3	-339.7	976.3	1495.8						
4:20	7:40	906.3	-356.4	973.9	1503.7						
4:15	7:45	896.9	-373.0	971.4	1511.3						
4:10	7:50	887.0	-389.4	968.7	1518.8						
4:05	7:55	876.7	-405.7	966.0	1526.0						
4:00	8:00	866.0	-421.7	963.2	1533.1						
3:55	8:05	854.9	-437.5	960.4	1540.0						
3:50	8:10	843.4	-453.2	957.4	1546.7						
3:45	8:15	831.5	-468.6	954.4	1553.2						
3:40	8:20	819.2	-483.7	951.3	1559.6						
3:35	8:25	806.4	-498.7	948.2	1565.8						
3:30	8:30	793.4	-513.4	945.0	1571.7						
3:25	8:35	779.9	-527.9	941.8	1577.5						
3:20	8:40	766.0	-542.1	938.5	1583.2						
3:15	8:45	751.8	-556.1	935.1	1588.6						
3:10	8:50	737.3	-569.8	931.8	1593.9						
3:05	8:55	722.4	-583.2	928.4	1599.1						
3:00	9:00	707.1	-596.4	925.0	1604.0						

## Analematic Sundial

Latitude: 57.5° N/S

## Date Scale

Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 843.4 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-228.0	-223.7	-222.3	-216.4	-214.7	-207.3	-205.3	-196.5	-194.2	-184.3	-181.7
February	-164.9	-152.9	-149.7	-137.0	-133.8	-120.4	-117.0	-103.2	-99.7	-85.5	-81.8
March	-71.0	-56.5	-52.8	-38.0	-34.4	-19.5	-15.9	-0.9	2.7	17.5	21.2
April	43.2	57.7	61.3	75.5	79.1	93.0	96.4	110.0	113.3	126.4	129.6
May	145.2	157.1	160.0	171.1	173.8	184.0	186.4	195.7	197.9	206.0	207.9
June	218.0	223.2	224.4	228.3	229.2	231.6	232.0	232.8	233.0	231.3	232.1
July	229.2	225.5	224.4	219.5	218.1	211.6	209.9	202.3	200.2	191.5	189.2
August	174.4	163.6	160.8	149.2	146.3	134.1	130.9	118.1	114.9	101.6	98.2
September	77.7	63.7	60.2	45.9	42.3	27.9	24.3	9.8	6.1	-8.5	-12.2
October	-30.4	-45.0	-48.6	-63.1	-66.6	-81.0	-84.5	-98.5	-102.0	-115.7	-119.0
November	-138.7	-151.2	-154.3	-166.1	-169.0	-180.0	-182.6	-192.6	-194.9	-203.8	-205.9
December	-215.1	-221.3	-222.7	-227.2	-228.2	-231.1	-231.6	-232.8	-233.0	-232.4	-232.1

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	228.0	223.7	222.3	216.4	214.7	207.3	205.3	196.5	194.2	184.3	181.7
February	164.9	152.9	149.7	137.0	133.8	120.4	117.0	103.2	99.7	85.5	81.8
March	71.0	56.5	52.8	38.0	34.4	19.5	15.9	0.9	-2.7	-17.5	-21.2
April	-43.2	-57.7	-61.3	-75.5	-79.1	-93.0	-96.4	-110.0	-113.3	-126.4	-129.6
May	-145.2	-157.1	-160.0	-171.1	-173.8	-184.0	-186.4	-195.7	-197.9	-206.0	-207.9
June	-218.0	-223.2	-224.4	-228.3	-229.2	-231.6	-232.0	-232.8	-233.0	-231.3	-232.1
July	-229.2	-225.5	-224.4	-219.5	-218.1	-211.6	-209.9	-202.3	-200.2	-191.5	-189.2
August	-174.4	-163.6	-160.8	-149.2	-146.3	-134.1	-130.9	-118.1	-114.9	-101.6	-98.2
September	-77.7	-63.7	-60.2	-45.9	-42.3	-27.9	-24.3	-9.8	-6.1	8.5	12.2
October	30.4	45.0	48.6	63.1	66.6	81.0	84.5	98.5	102.0	115.7	119.0
November	138.7	151.2	154.3	166.1	169.0	180.0	182.6	192.6	194.9	203.8	205.9
December	215.1	221.3	222.7	227.2	228.2	231.1	231.6	232.8	233.0	232.4	232.1

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    | 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: 57.5° N/S

Earliest Sunrise: 2:59 a.m.    Latest Sunset: 9:01 p.m.  
 Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 1265.1 mm  
 Sunrise/Sunset Markers: X = ± 353.5 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1265.1	1265.1	0.0						
11:55	12:05	32.7	1264.8	1265.2	32.7	8:25	3:35	1209.7	748.1	1422.3	1315.5
11:50	12:10	65.4	1263.9	1265.6	65.4	8:20	3:40	1228.7	725.6	1427.0	1341.9
11:45	12:15	98.1	1262.4	1266.2	98.1	8:15	3:45	1247.2	702.8	1431.6	1368.1
11:40	12:20	130.7	1260.3	1267.0	130.8	8:10	3:50	1265.1	679.7	1436.1	1393.9
11:35	12:25	163.3	1257.6	1268.1	163.5	8:05	3:55	1282.4	656.3	1440.6	1419.5
11:30	12:30	195.8	1254.3	1269.5	196.1	8:00	4:00	1299.0	632.5	1444.9	1444.9
11:25	12:35	228.2	1250.4	1271.0	228.7	7:55	4:05	1315.1	608.5	1449.0	1469.9
11:20	12:40	260.5	1245.9	1272.8	261.2	7:50	4:10	1330.5	584.2	1453.1	1494.6
11:15	12:45	292.6	1240.8	1274.8	293.6	7:45	4:15	1345.3	559.5	1457.0	1519.1
11:10	12:50	324.7	1235.1	1277.1	326.0	7:40	4:20	1359.5	534.6	1460.8	1543.3
11:05	12:55	356.5	1228.8	1279.5	358.4	7:35	4:25	1373.0	509.5	1464.5	1567.1
11:00	1:00	388.2	1222.0	1282.2	390.6	7:30	4:30	1385.8	484.1	1467.9	1590.7
10:55	1:05	419.7	1214.5	1285.0	422.8	7:25	4:35	1398.0	458.5	1471.3	1614.0
10:50	1:10	451.1	1206.5	1288.1	454.8	7:20	4:40	1409.5	432.7	1474.5	1637.0
10:45	1:15	482.2	1197.9	1291.3	486.8	7:15	4:45	1420.4	406.6	1477.5	1659.7
10:40	1:20	513.0	1188.8	1294.8	518.7	7:10	4:50	1430.6	380.4	1480.3	1682.0
10:35	1:25	543.7	1179.1	1298.4	550.4	7:05	4:55	1440.1	354.0	1482.9	1704.1
10:30	1:30	574.0	1168.8	1302.1	582.0	7:00	5:00	1448.9	327.4	1485.4	1725.8
10:25	1:35	604.1	1157.9	1306.1	613.5	6:55	5:05	1457.0	300.7	1487.7	1747.3
10:20	1:40	633.9	1146.6	1310.1	644.9	6:50	5:10	1464.4	273.8	1489.8	1768.4
10:15	1:45	663.4	1134.6	1314.3	676.1	6:45	5:15	1471.2	246.8	1491.7	1789.2
10:10	1:50	692.6	1122.1	1318.7	707.2	6:40	5:20	1477.2	219.7	1493.5	1809.7
10:05	1:55	721.5	1109.1	1323.1	738.1	6:35	5:25	1482.5	192.4	1495.0	1829.9
10:00	2:00	750.0	1095.6	1327.7	768.9	6:30	5:30	1487.2	165.1	1496.3	1849.8
9:55	2:05	778.2	1081.5	1332.4	799.5	6:25	5:35	1491.1	137.7	1497.4	1869.3
9:50	2:10	805.9	1067.0	1337.1	829.9	6:20	5:40	1494.3	110.3	1498.4	1888.5
9:45	2:15	833.4	1051.9	1342.0	860.2	6:15	5:45	1496.8	82.7	1499.1	1907.4
9:40	2:20	860.4	1036.3	1346.9	890.3	6:10	5:50	1498.6	55.2	1499.6	1926.0
9:35	2:25	887.0	1020.2	1351.9	920.1	6:05	5:55	1499.6	27.6	1499.9	1944.3
9:30	2:30	913.1	1003.7	1356.9	949.8	6:00	6:00	1500.0	0.0	1500.0	1962.3
9:25	2:35	938.9	986.6	1362.0	979.3	5:55	6:05	1499.6	-27.6	1499.9	1979.9
9:20	2:40	964.2	969.1	1367.1	1008.6	5:50	6:10	1498.6	-55.2	1499.6	1997.2
9:15	2:45	989.0	951.1	1372.2	1037.7	5:45	6:15	1496.8	-82.7	1499.1	2014.2
9:10	2:50	1013.4	932.7	1377.3	1066.5	5:40	6:20	1494.3	-110.3	1498.4	2030.9
9:05	2:55	1037.3	913.9	1382.4	1095.1	5:35	6:25	1491.1	-137.7	1497.4	2047.2
9:00	3:00	1060.7	894.6	1387.5	1123.5	5:30	6:30	1487.2	-165.1	1496.3	2063.3
8:55	3:05	1083.5	874.8	1392.6	1151.7	5:25	6:35	1482.5	-192.4	1495.0	2079.0
8:50	3:10	1105.9	854.7	1397.7	1179.6	5:20	6:40	1477.2	-219.7	1493.5	2094.4
8:45	3:15	1127.8	834.1	1402.7	1207.3	5:15	6:45	1471.2	-246.8	1491.7	2109.5
8:40	3:20	1149.1	813.2	1407.7	1234.7	5:10	6:50	1464.4	-273.8	1489.8	2124.3
8:35	3:25	1169.8	791.8	1412.6	1261.9	5:05	6:55	1457.0	-300.7	1487.7	2138.8
8:30	3:30	1190.0	770.1	1417.5	1288.9	5:00	7:00	1448.9	-327.4	1485.4	2153.0

Analemmatic Sundial

Latitude: 57.5° N/S

Earliest Sunrise: 2:59 a.m. Latest Sunset: 9:01 p.m.  
 Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 1265.1 mm  
 Sunrise/Sunset Markers: X = ± 353.5 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
4:55	7:05	1440.1	-354.0	1482.9	2166.9	2:55	9:05	1037.3	-913.9	1382.4	2413.2
4:50	7:10	1430.6	-380.4	1480.3	2180.4	2:50	9:10	1013.4	-932.7	1377.3	2420.2
4:45	7:15	1420.4	-406.6	1477.5	2193.7	2:45	9:15	989.0	-951.1	1372.2	2426.9
4:40	7:20	1409.5	-432.7	1474.5	2206.6						
4:35	7:25	1398.0	-458.5	1471.3	2219.3						
4:30	7:30	1385.8	-484.1	1467.9	2231.6						
4:25	7:35	1373.0	-509.5	1464.5	2243.7						
4:20	7:40	1359.5	-534.6	1460.8	2255.5						
4:15	7:45	1345.3	-559.5	1457.0	2267.0						
4:10	7:50	1330.5	-584.2	1453.1	2278.1						
4:05	7:55	1315.1	-608.5	1449.0	2289.1						
4:00	8:00	1299.0	-632.5	1444.9	2299.7						
3:55	8:05	1282.4	-656.3	1440.6	2310.0						
3:50	8:10	1265.1	-679.7	1436.1	2320.1						
3:45	8:15	1247.2	-702.8	1431.6	2329.9						
3:40	8:20	1228.7	-725.6	1427.0	2339.4						
3:35	8:25	1209.7	-748.1	1422.3	2348.6						
3:30	8:30	1190.0	-770.1	1417.5	2357.6						
3:25	8:35	1169.8	-791.8	1412.6	2366.3						
3:20	8:40	1149.1	-813.2	1407.7	2374.8						
3:15	8:45	1127.8	-834.1	1402.7	2383.0						
3:10	8:50	1105.9	-854.7	1397.7	2390.9						
3:05	8:55	1083.5	-874.8	1392.6	2398.6						
3:00	9:00	1060.7	-894.6	1387.5	2406.0						

## Analemmatic Sundial

Latitude: 57.5° N/S

## Date Scale

Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 1265.1 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-341.9	-335.5	-333.5	-324.6	-322.0	-311.0	-307.9	-294.8	-291.3	-276.4	-272.5
February	-247.3	-229.3	-224.6	-205.4	-200.6	-180.6	-175.4	-154.8	-149.5	-128.2	-122.8
March	-106.5	-84.7	-79.2	-57.1	-51.6	-29.3	-23.8	-1.4	4.1	26.3	31.8
April	64.8	86.6	92.0	113.3	118.6	139.5	144.6	165.0	170.0	189.6	194.4
May	217.8	235.7	240.0	256.6	260.6	275.9	279.6	293.5	296.9	309.1	311.8
June	326.9	334.8	336.6	342.4	343.8	347.4	347.9	349.3	349.4	346.9	348.1
July	343.8	338.3	336.6	329.2	327.1	317.5	314.9	303.4	300.4	287.3	283.8
August	261.6	245.3	241.2	223.8	219.4	201.1	196.3	177.2	172.3	152.4	147.3
September	116.6	95.5	90.3	68.8	63.4	41.8	36.5	14.6	9.1	-12.8	-18.3
October	-45.6	-67.5	-72.9	-94.7	-100.0	-121.5	-126.8	-147.8	-153.0	-173.5	-178.5
November	-208.0	-226.8	-231.4	-249.2	-253.5	-270.0	-273.9	-288.9	-292.4	-305.7	-308.9
December	-322.7	-332.0	-334.0	-340.8	-342.3	-346.6	-347.4	-349.3	-349.4	-348.6	-348.1

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	341.9	335.5	333.5	324.6	322.0	311.0	307.9	294.8	291.3	276.4	272.5
February	247.3	229.3	224.6	205.4	200.6	180.6	175.4	154.8	149.5	128.2	122.8
March	106.5	84.7	79.2	57.1	51.6	29.3	23.8	1.4	-4.1	-26.3	-31.8
April	-64.8	-86.6	-92.0	-113.3	-118.6	-139.5	-144.6	-165.0	-170.0	-189.6	-194.4
May	-217.8	-235.7	-240.0	-256.6	-260.6	-275.9	-279.6	-293.5	-296.9	-309.1	-311.8
June	-326.9	-334.8	-336.6	-342.4	-343.8	-347.4	-347.9	-349.3	-349.4	-346.9	-348.1
July	-343.8	-338.3	-336.6	-329.2	-327.1	-317.5	-314.9	-303.4	-300.4	-287.3	-283.8
August	-261.6	-245.3	-241.2	-223.8	-219.4	-201.1	-196.3	-177.2	-172.3	-152.4	-147.3
September	-116.6	-95.5	-90.3	-68.8	-63.4	-41.8	-36.5	-14.6	-9.1	12.8	18.3
October	45.6	67.5	72.9	94.7	100.0	121.5	126.8	147.8	153.0	173.5	178.5
November	208.0	226.8	231.4	249.2	253.5	270.0	273.9	288.9	292.4	305.7	308.9
December	322.7	332.0	334.0	340.8	342.3	346.6	347.4	349.3	349.4	348.6	348.1

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    | 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: 57.5° N/S

Earliest Sunrise: 2:59 a.m.    Latest Sunset: 9:01 p.m.  
 Semi-Major Axis (E-W): 2000 mm    Semi-Minor Axis (N-S): 1686.8 mm  
 Sunrise/Sunset Markers: X = ± 471.4 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1686.8	1686.8	0.0						
11:55	12:05	43.6	1686.4	1686.9	43.6	8:25	3:35	1612.9	997.4	1896.4	1754.0
11:50	12:10	87.2	1685.2	1687.4	87.3	8:20	3:40	1638.3	967.5	1902.7	1789.2
11:45	12:15	130.8	1683.2	1688.2	130.9	8:15	3:45	1662.9	937.1	1908.8	1824.1
11:40	12:20	174.3	1680.4	1689.4	174.4	8:10	3:50	1686.8	906.3	1914.8	1858.6
11:35	12:25	217.7	1676.8	1690.8	218.0	8:05	3:55	1709.8	875.1	1920.7	1892.7
11:30	12:30	261.1	1672.4	1692.6	261.5	8:00	4:00	1732.1	843.4	1926.5	1926.5
11:25	12:35	304.2	1667.2	1694.7	304.9	7:55	4:05	1753.5	811.3	1932.1	1959.9
11:20	12:40	347.3	1661.2	1697.1	348.2	7:50	4:10	1774.0	778.9	1937.5	1992.9
11:15	12:45	390.2	1654.4	1699.8	391.5	7:45	4:15	1793.7	746.0	1942.7	2025.5
11:10	12:50	432.9	1646.8	1702.7	434.7	7:40	4:20	1812.6	712.9	1947.8	2057.7
11:05	12:55	475.4	1638.4	1706.0	477.8	7:35	4:25	1830.6	679.3	1952.6	2089.5
11:00	1:00	517.6	1629.3	1709.6	520.8	7:30	4:30	1847.8	645.5	1957.3	2121.0
10:55	1:05	559.7	1619.4	1713.4	563.7	7:25	4:35	1864.0	611.4	1961.7	2152.0
10:50	1:10	601.4	1608.7	1717.5	606.5	7:20	4:40	1879.4	576.9	1965.9	2182.6
10:45	1:15	642.9	1597.3	1721.8	649.1	7:15	4:45	1893.9	542.2	1969.9	2212.9
10:40	1:20	684.0	1585.1	1726.4	691.6	7:10	4:50	1907.4	507.2	1973.7	2242.7
10:35	1:25	724.9	1572.1	1731.2	733.9	7:05	4:55	1920.1	472.0	1977.3	2272.1
10:30	1:30	765.4	1558.4	1736.2	776.1	7:00	5:00	1931.9	436.6	1980.6	2301.1
10:25	1:35	805.5	1543.9	1741.4	818.1	6:55	5:05	1942.7	400.9	1983.6	2329.7
10:20	1:40	845.2	1528.7	1746.8	859.9	6:50	5:10	1952.6	365.1	1986.4	2357.9
10:15	1:45	884.6	1512.8	1752.5	901.5	6:45	5:15	1961.6	329.1	1989.0	2385.6
10:10	1:50	923.5	1496.2	1758.3	943.0	6:40	5:20	1969.6	292.9	1991.3	2412.9
10:05	1:55	962.0	1478.8	1764.2	984.2	6:35	5:25	1976.7	256.6	1993.3	2439.8
10:00	2:00	1000.0	1460.8	1770.3	1025.2	6:30	5:30	1982.9	220.2	1995.1	2466.3
9:55	2:05	1037.5	1442.1	1776.5	1066.0	6:25	5:35	1988.1	183.6	1996.6	2492.4
9:50	2:10	1074.6	1422.6	1782.9	1106.6	6:20	5:40	1992.4	147.0	1997.8	2518.0
9:45	2:15	1111.1	1402.5	1789.3	1146.9	6:15	5:45	1995.7	110.3	1998.8	2543.3
9:40	2:20	1147.2	1381.7	1795.9	1187.0	6:10	5:50	1998.1	73.6	1999.5	2568.0
9:35	2:25	1182.6	1360.3	1802.5	1226.9	6:05	5:55	1999.5	36.8	1999.9	2592.4
9:30	2:30	1217.5	1338.2	1809.2	1266.4	6:00	6:00	2000.0	0.0	2000.0	2616.3
9:25	2:35	1251.8	1315.5	1815.9	1305.7	5:55	6:05	1999.5	-36.8	1999.9	2639.9
9:20	2:40	1285.6	1292.2	1822.7	1344.8	5:50	6:10	1998.1	-73.6	1999.5	2662.9
9:15	2:45	1318.7	1268.2	1829.6	1383.5	5:45	6:15	1995.7	-110.3	1998.8	2685.6
9:10	2:50	1351.2	1243.6	1836.4	1422.0	5:40	6:20	1992.4	-147.0	1997.8	2707.8
9:05	2:55	1383.0	1218.5	1843.2	1460.2	5:35	6:25	1988.1	-183.6	1996.6	2729.7
9:00	3:00	1414.2	1192.7	1850.0	1498.0	5:30	6:30	1982.9	-220.2	1995.1	2751.1
8:55	3:05	1444.7	1166.4	1856.8	1535.6	5:25	6:35	1976.7	-256.6	1993.3	2772.0
8:50	3:10	1474.6	1139.6	1863.6	1572.8	5:20	6:40	1969.6	-292.9	1991.3	2792.6
8:45	3:15	1503.7	1112.2	1870.3	1609.7	5:15	6:45	1961.6	-329.1	1989.0	2812.7
8:40	3:20	1532.1	1084.2	1876.9	1646.3	5:10	6:50	1952.6	-365.1	1986.4	2832.5
8:35	3:25	1559.8	1055.8	1883.5	1682.6	5:05	6:55	1942.7	-400.9	1983.6	2851.8
8:30	3:30	1586.7	1026.8	1890.0	1718.5	5:00	7:00	1931.9	-436.6	1980.6	2870.7

Analemmatic Sundial

Latitude: 57.5° N/S

Earliest Sunrise: 2:59 a.m. Latest Sunset: 9:01 p.m.  
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1686.8 mm  
 Sunrise/Sunset Markers: X = ± 471.4 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
4:55	7:05	1920.1	-472.0	1977.3	2889.1	2:55	9:05	1383.0	-1218.5	1843.2	3217.6
4:50	7:10	1907.4	-507.2	1973.7	2907.2	2:50	9:10	1351.2	-1243.6	1836.4	3226.9
4:45	7:15	1893.9	-542.2	1969.9	2924.9	2:45	9:15	1318.7	-1268.2	1829.6	3235.9
4:40	7:20	1879.4	-576.9	1965.9	2942.2						
4:35	7:25	1864.0	-611.4	1961.7	2959.1						
4:30	7:30	1847.8	-645.5	1957.3	2975.5						
4:25	7:35	1830.6	-679.3	1952.6	2991.6						
4:20	7:40	1812.6	-712.9	1947.8	3007.3						
4:15	7:45	1793.7	-746.0	1942.7	3022.6						
4:10	7:50	1774.0	-778.9	1937.5	3037.5						
4:05	7:55	1753.5	-811.3	1932.1	3052.1						
4:00	8:00	1732.1	-843.4	1926.5	3066.2						
3:55	8:05	1709.8	-875.1	1920.7	3080.0						
3:50	8:10	1686.8	-906.3	1914.8	3093.4						
3:45	8:15	1662.9	-937.1	1908.8	3106.5						
3:40	8:20	1638.3	-967.5	1902.7	3119.2						
3:35	8:25	1612.9	-997.4	1896.4	3131.5						
3:30	8:30	1586.7	-1026.8	1890.0	3143.5						
3:25	8:35	1559.8	-1055.8	1883.5	3155.1						
3:20	8:40	1532.1	-1084.2	1876.9	3166.4						
3:15	8:45	1503.7	-1112.2	1870.3	3177.3						
3:10	8:50	1474.6	-1139.6	1863.6	3187.9						
3:05	8:55	1444.7	-1166.4	1856.8	3198.1						
3:00	9:00	1414.2	-1192.7	1850.0	3208.1						

## Analemmatic Sundial

Latitude: 57.5° N/S

## Date Scale

Semi-Major Axis (E-W): 2000 mm    Semi-Minor Axis (N-S): 1686.8 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-455.9	-447.3	-444.7	-432.9	-429.4	-414.7	-410.6	-393.0	-388.4	-368.5	-363.3
February	-329.8	-305.7	-299.4	-273.9	-267.5	-240.8	-233.9	-206.4	-199.4	-171.0	-163.7
March	-142.0	-112.9	-105.6	-76.1	-68.7	-39.0	-31.7	-1.9	5.4	35.1	42.4
April	86.5	115.4	122.6	151.0	158.1	186.0	192.8	220.0	226.6	252.8	259.2
May	290.4	314.2	319.9	342.1	347.5	367.9	372.7	391.3	395.8	412.1	415.7
June	435.9	446.4	448.9	456.6	458.4	463.2	463.9	465.7	465.9	462.6	464.1
July	458.4	451.1	448.9	439.0	436.1	423.3	419.8	404.6	400.5	383.1	378.4
August	348.7	327.1	321.6	298.4	292.6	268.1	261.8	236.3	229.8	203.2	196.5
September	155.4	127.4	120.3	91.7	84.6	55.8	48.6	19.5	12.2	-17.1	-24.4
October	-60.8	-90.0	-97.2	-126.2	-133.3	-161.9	-169.0	-197.0	-204.0	-231.4	-238.0
November	-277.3	-302.5	-308.5	-332.2	-338.0	-360.0	-365.2	-385.2	-389.8	-407.6	-411.9
December	-430.2	-442.7	-445.3	-454.4	-456.4	-462.1	-463.2	-465.7	-465.9	-464.8	-464.1

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	455.9	447.3	444.7	432.9	429.4	414.7	410.6	393.0	388.4	368.5	363.3
February	329.8	305.7	299.4	273.9	267.5	240.8	233.9	206.4	199.4	171.0	163.7
March	142.0	112.9	105.6	76.1	68.7	39.0	31.7	1.9	-5.4	-35.1	-42.4
April	-86.5	-115.4	-122.6	-151.0	-158.1	-186.0	-192.8	-220.0	-226.6	-252.8	-259.2
May	-290.4	-314.2	-319.9	-342.1	-347.5	-367.9	-372.7	-391.3	-395.8	-412.1	-415.7
June	-435.9	-446.4	-448.9	-456.6	-458.4	-463.2	-463.9	-465.7	-465.9	-462.6	-464.1
July	-458.4	-451.1	-448.9	-439.0	-436.1	-423.3	-419.8	-404.6	-400.5	-383.1	-378.4
August	-348.7	-327.1	-321.6	-298.4	-292.6	-268.1	-261.8	-236.3	-229.8	-203.2	-196.5
September	-155.4	-127.4	-120.3	-91.7	-84.6	-55.8	-48.6	-19.5	-12.2	17.1	24.4
October	60.8	90.0	97.2	126.2	133.3	161.9	169.0	197.0	204.0	231.4	238.0
November	277.3	302.5	308.5	332.2	338.0	360.0	365.2	385.2	389.8	407.6	411.9
December	430.2	442.7	445.3	454.4	456.4	462.1	463.2	465.7	465.9	464.8	464.1

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    | 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: 57.5° N/S

Earliest Sunrise: 2:59 a.m. Latest Sunset: 9:01 p.m.  
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 2108.5 mm  
 Sunrise/Sunset Markers: X = ± 589.2 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	2108.5	2108.5	0.0						
11:55	12:05	54.5	2108.0	2108.7	54.5	8:25	3:35	2016.1	1246.8	2370.5	2192.5
11:50	12:10	109.0	2106.5	2109.3	109.1	8:20	3:40	2047.9	1209.4	2378.3	2236.6
11:45	12:15	163.5	2104.0	2110.3	163.6	8:15	3:45	2078.7	1171.4	2386.0	2280.1
11:40	12:20	217.9	2100.5	2111.7	218.0	8:10	3:50	2108.5	1132.9	2393.6	2323.2
11:35	12:25	272.2	2095.9	2113.5	272.5	8:05	3:55	2137.3	1093.8	2400.9	2365.9
11:30	12:30	326.3	2090.4	2115.8	326.8	8:00	4:00	2165.1	1054.2	2408.1	2408.1
11:25	12:35	380.3	2083.9	2118.4	381.1	7:55	4:05	2191.8	1014.2	2415.1	2449.8
11:20	12:40	434.1	2076.4	2121.3	435.3	7:50	4:10	2217.5	973.6	2421.8	2491.1
11:15	12:45	487.7	2068.0	2124.7	489.4	7:45	4:15	2242.2	932.6	2428.4	2531.8
11:10	12:50	541.1	2058.5	2128.4	543.4	7:40	4:20	2265.8	891.1	2434.7	2572.1
11:05	12:55	594.2	2048.1	2132.5	597.3	7:35	4:25	2288.3	849.2	2440.8	2611.9
11:00	1:00	647.0	2036.6	2136.9	651.0	7:30	4:30	2309.7	806.9	2446.6	2651.2
10:55	1:05	699.6	2024.2	2141.7	704.6	7:25	4:35	2330.0	764.2	2452.1	2690.0
10:50	1:10	751.8	2010.9	2146.8	758.1	7:20	4:40	2349.2	721.1	2457.4	2728.3
10:45	1:15	803.6	1996.6	2152.2	811.4	7:15	4:45	2367.3	677.7	2462.4	2766.1
10:40	1:20	855.1	1981.3	2157.9	864.5	7:10	4:50	2384.3	634.0	2467.2	2803.4
10:35	1:25	906.1	1965.1	2164.0	917.4	7:05	4:55	2400.1	590.0	2471.6	2840.1
10:30	1:30	956.7	1948.0	2170.2	970.1	7:00	5:00	2414.8	545.7	2475.7	2876.4
10:25	1:35	1006.9	1929.9	2176.8	1022.6	6:55	5:05	2428.4	501.2	2479.5	2912.1
10:20	1:40	1056.5	1910.9	2183.6	1074.9	6:50	5:10	2440.7	456.4	2483.0	2947.3
10:15	1:45	1105.7	1891.0	2190.6	1126.9	6:45	5:15	2452.0	411.3	2486.2	2982.0
10:10	1:50	1154.4	1870.2	2197.8	1178.7	6:40	5:20	2462.0	366.1	2489.1	3016.2
10:05	1:55	1202.5	1848.6	2205.2	1230.2	6:35	5:25	2470.9	320.7	2491.6	3049.8
10:00	2:00	1250.0	1826.0	2212.9	1281.5	6:30	5:30	2478.6	275.2	2493.8	3082.9
9:55	2:05	1296.9	1802.6	2220.6	1332.5	6:25	5:35	2485.1	229.5	2495.7	3115.5
9:50	2:10	1343.2	1778.3	2228.6	1383.2	6:20	5:40	2490.5	183.8	2497.3	3147.5
9:45	2:15	1388.9	1753.1	2236.6	1433.7	6:15	5:45	2494.6	137.9	2498.5	3179.1
9:40	2:20	1433.9	1727.2	2244.8	1483.8	6:10	5:50	2497.6	92.0	2499.3	3210.0
9:35	2:25	1478.3	1700.4	2253.1	1533.6	6:05	5:55	2499.4	46.0	2499.8	3240.5
9:30	2:30	1521.9	1672.8	2261.5	1583.0	6:00	6:00	2500.0	0.0	2500.0	3270.4
9:25	2:35	1564.8	1644.4	2269.9	1632.2	5:55	6:05	2499.4	-46.0	2499.8	3299.8
9:20	2:40	1607.0	1615.2	2278.4	1681.0	5:50	6:10	2497.6	-92.0	2499.3	3328.7
9:15	2:45	1648.4	1585.2	2286.9	1729.4	5:45	6:15	2494.6	-137.9	2498.5	3357.0
9:10	2:50	1689.0	1554.5	2295.5	1777.5	5:40	6:20	2490.5	-183.8	2497.3	3384.8
9:05	2:55	1728.8	1523.1	2304.0	1825.2	5:35	6:25	2485.1	-229.5	2495.7	3412.1
9:00	3:00	1767.8	1490.9	2312.5	1872.5	5:30	6:30	2478.6	-275.2	2493.8	3438.8
8:55	3:05	1805.9	1458.0	2321.0	1919.5	5:25	6:35	2470.9	-320.7	2491.6	3465.0
8:50	3:10	1843.2	1424.5	2329.5	1966.0	5:20	6:40	2462.0	-366.1	2489.1	3490.7
8:45	3:15	1879.6	1390.2	2337.9	2012.2	5:15	6:45	2452.0	-411.3	2486.2	3515.9
8:40	3:20	1915.1	1355.3	2346.2	2057.9	5:10	6:50	2440.7	-456.4	2483.0	3540.6
8:35	3:25	1949.7	1319.7	2354.4	2103.2	5:05	6:55	2428.4	-501.2	2479.5	3564.7
8:30	3:30	1983.4	1283.6	2362.5	2148.1	5:00	7:00	2414.8	-545.7	2475.7	3588.3

## Analemmatic Sundial

Latitude: 57.5° N/S

Earliest Sunrise: 2:59 a.m.    Latest Sunset: 9:01 p.m.  
 Semi-Major Axis (E-W): 2500 mm    Semi-Minor Axis (N-S): 2108.5 mm  
 Sunrise/Sunset Markers: X = ± 589.2 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
4:55	7:05	2400.1	-590.0	2471.6	3611.4	2:55	9:05	1728.8	-1523.1	2304.0	4022.1
4:50	7:10	2384.3	-634.0	2467.2	3634.0	2:50	9:10	1689.0	-1554.5	2295.5	4033.6
4:45	7:15	2367.3	-677.7	2462.4	3656.1	2:45	9:15	1648.4	-1585.2	2286.9	4044.8
4:40	7:20	2349.2	-721.1	2457.4	3677.7						
4:35	7:25	2330.0	-764.2	2452.1	3698.8						
4:30	7:30	2309.7	-806.9	2446.6	3719.4						
4:25	7:35	2288.3	-849.2	2440.8	3739.5						
4:20	7:40	2265.8	-891.1	2434.7	3759.1						
4:15	7:45	2242.2	-932.6	2428.4	3778.3						
4:10	7:50	2217.5	-973.6	2421.8	3796.9						
4:05	7:55	2191.8	-1014.2	2415.1	3815.1						
4:00	8:00	2165.1	-1054.2	2408.1	3832.8						
3:55	8:05	2137.3	-1093.8	2400.9	3850.0						
3:50	8:10	2108.5	-1132.9	2393.6	3866.8						
3:45	8:15	2078.7	-1171.4	2386.0	3883.1						
3:40	8:20	2047.9	-1209.4	2378.3	3899.0						
3:35	8:25	2016.1	-1246.8	2370.5	3914.4						
3:30	8:30	1983.4	-1283.6	2362.5	3929.3						
3:25	8:35	1949.7	-1319.7	2354.4	3943.9						
3:20	8:40	1915.1	-1355.3	2346.2	3958.0						
3:15	8:45	1879.6	-1390.2	2337.9	3971.6						
3:10	8:50	1843.2	-1424.5	2329.5	3984.9						
3:05	8:55	1805.9	-1458.0	2321.0	3997.7						
3:00	9:00	1767.8	-1490.9	2312.5	4010.1						

**Analematic Sundial**

Latitude: 57.5° N/S

**Date Scale**

Semi-Major Axis (E-W): 2500 mm    Semi-Minor Axis (N-S): 2108.5 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-569.9	-559.1	-555.8	-541.1	-536.7	-518.3	-513.2	-491.3	-485.5	-460.7	-454.1
February	-412.2	-382.1	-374.3	-342.4	-334.4	-301.0	-292.4	-257.9	-249.2	-213.7	-204.6
March	-177.6	-141.2	-131.9	-95.1	-85.9	-48.8	-39.6	-2.3	6.8	43.9	53.0
April	108.1	144.3	153.3	188.8	197.6	232.5	241.0	275.0	283.3	316.0	324.0
May	362.9	392.8	399.9	427.7	434.4	459.9	465.9	489.2	494.8	515.1	519.7
June	544.9	558.0	561.1	570.7	572.9	579.1	579.9	582.1	582.4	578.2	580.2
July	572.9	563.8	561.1	548.7	545.2	529.1	524.8	505.7	500.6	478.8	473.0
August	435.9	408.9	402.0	373.0	365.7	335.2	327.2	295.3	287.2	254.1	245.6
September	194.3	159.2	150.4	114.7	105.7	69.7	60.8	24.4	15.2	-21.3	-30.5
October	-76.0	-112.6	-121.5	-157.8	-166.6	-202.4	-211.3	-246.3	-255.0	-289.2	-297.5
November	-346.6	-378.1	-385.7	-415.3	-422.5	-450.0	-456.5	-481.5	-487.3	-509.4	-514.8
December	-537.8	-553.4	-556.7	-568.0	-570.5	-577.7	-579.1	-582.1	-582.4	-581.0	-580.2

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	569.9	559.1	555.8	541.1	536.7	518.3	513.2	491.3	485.5	460.7	454.1
February	412.2	382.1	374.3	342.4	334.4	301.0	292.4	257.9	249.2	213.7	204.6
March	177.6	141.2	131.9	95.1	85.9	48.8	39.6	2.3	-6.8	-43.9	-53.0
April	-108.1	-144.3	-153.3	-188.8	-197.6	-232.5	-241.0	-275.0	-283.3	-316.0	-324.0
May	-362.9	-392.8	-399.9	-427.7	-434.4	-459.9	-465.9	-489.2	-494.8	-515.1	-519.7
June	-544.9	-558.0	-561.1	-570.7	-572.9	-579.1	-579.9	-582.1	-582.4	-578.2	-580.2
July	-572.9	-563.8	-561.1	-548.7	-545.2	-529.1	-524.8	-505.7	-500.6	-478.8	-473.0
August	-435.9	-408.9	-402.0	-373.0	-365.7	-335.2	-327.2	-295.3	-287.2	-254.1	-245.6
September	-194.3	-159.2	-150.4	-114.7	-105.7	-69.7	-60.8	-24.4	-15.2	21.3	30.5
October	76.0	112.6	121.5	157.8	166.6	202.4	211.3	246.3	255.0	289.2	297.5
November	346.6	378.1	385.7	415.3	422.5	450.0	456.5	481.5	487.3	509.4	514.8
December	537.8	553.4	556.7	568.0	570.5	577.7	579.1	582.1	582.4	581.0	580.2

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
- 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