

Analemmatic Sundial

Latitude: 60.5° N/S

Earliest Sunrise: 2:28 a.m. Latest Sunset: 9:32 p.m.
 Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 870.4 mm
 Sunrise/Sunset Markers: X = ± 184.2 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	870.4	870.4	0.0						
11:55	12:05	21.8	870.1	870.4	21.8	8:25	3:35	806.4	514.6	956.7	881.4
11:50	12:10	43.6	869.5	870.6	43.6	8:20	3:40	819.2	499.2	959.3	899.3
11:45	12:15	65.4	868.5	871.0	65.4	8:15	3:45	831.5	483.5	961.9	917.0
11:40	12:20	87.2	867.0	871.4	87.2	8:10	3:50	843.4	467.6	964.4	934.6
11:35	12:25	108.9	865.2	872.0	109.0	8:05	3:55	854.9	451.5	966.8	952.0
11:30	12:30	130.5	862.9	872.7	130.7	8:00	4:00	866.0	435.2	969.2	969.2
11:25	12:35	152.1	860.2	873.6	152.5	7:55	4:05	876.7	418.6	971.5	986.3
11:20	12:40	173.6	857.1	874.5	174.2	7:50	4:10	887.0	401.9	973.8	1003.1
11:15	12:45	195.1	853.6	875.6	195.8	7:45	4:15	896.9	384.9	976.0	1019.8
11:10	12:50	216.4	849.7	876.9	217.4	7:40	4:20	906.3	367.8	978.1	1036.3
11:05	12:55	237.7	845.4	878.2	239.0	7:35	4:25	915.3	350.5	980.1	1052.6
11:00	1:00	258.8	840.7	879.6	260.5	7:30	4:30	923.9	333.1	982.1	1068.8
10:55	1:05	279.8	835.6	881.2	282.0	7:25	4:35	932.0	315.5	983.9	1084.7
10:50	1:10	300.7	830.1	882.9	303.4	7:20	4:40	939.7	297.7	985.7	1100.4
10:45	1:15	321.4	824.2	884.6	324.7	7:15	4:45	946.9	279.8	987.4	1116.0
10:40	1:20	342.0	817.9	886.5	346.0	7:10	4:50	953.7	261.7	989.0	1131.4
10:35	1:25	362.4	811.2	888.5	367.2	7:05	4:55	960.0	243.6	990.5	1146.6
10:30	1:30	382.7	804.1	890.5	388.4	7:00	5:00	965.9	225.3	991.8	1161.5
10:25	1:35	402.7	796.6	892.7	409.4	6:55	5:05	971.3	206.9	993.1	1176.3
10:20	1:40	422.6	788.8	894.9	430.4	6:50	5:10	976.3	188.4	994.3	1190.9
10:15	1:45	442.3	780.6	897.2	451.3	6:45	5:15	980.8	169.8	995.4	1205.3
10:10	1:50	461.7	772.0	899.6	472.1	6:40	5:20	984.8	151.1	996.3	1219.5
10:05	1:55	481.0	763.1	902.0	492.8	6:35	5:25	988.4	132.4	997.2	1233.5
10:00	2:00	500.0	753.8	904.5	513.4	6:30	5:30	991.4	113.6	997.9	1247.3
9:55	2:05	518.8	744.1	907.1	533.9	6:25	5:35	994.1	94.8	998.6	1260.8
9:50	2:10	537.3	734.1	909.7	554.3	6:20	5:40	996.2	75.9	999.1	1274.2
9:45	2:15	555.6	723.7	912.3	574.6	6:15	5:45	997.9	56.9	999.5	1287.4
9:40	2:20	573.6	713.0	915.0	594.8	6:10	5:50	999.0	38.0	999.8	1300.4
9:35	2:25	591.3	701.9	917.8	614.8	6:05	5:55	999.8	19.0	999.9	1313.1
9:30	2:30	608.8	690.5	920.5	634.8	6:00	6:00	1000.0	0.0	1000.0	1325.7
9:25	2:35	625.9	678.8	923.3	654.6	5:55	6:05	999.8	-19.0	999.9	1338.1
9:20	2:40	642.8	666.7	926.1	674.3	5:50	6:10	999.0	-38.0	999.8	1350.2
9:15	2:45	659.3	654.4	928.9	693.8	5:45	6:15	997.9	-56.9	999.5	1362.2
9:10	2:50	675.6	641.7	931.8	713.2	5:40	6:20	996.2	-75.9	999.1	1373.9
9:05	2:55	691.5	628.7	934.6	732.5	5:35	6:25	994.1	-94.8	998.6	1385.5
9:00	3:00	707.1	615.4	937.4	751.7	5:30	6:30	991.4	-113.6	997.9	1396.8
8:55	3:05	722.4	601.9	940.2	770.6	5:25	6:35	988.4	-132.4	997.2	1408.0
8:50	3:10	737.3	588.0	943.0	789.5	5:20	6:40	984.8	-151.1	996.3	1418.9
8:45	3:15	751.8	573.9	945.8	808.2	5:15	6:45	980.8	-169.8	995.4	1429.6
8:40	3:20	766.0	559.5	948.6	826.7	5:10	6:50	976.3	-188.4	994.3	1440.2
8:35	3:25	779.9	544.8	951.3	845.1	5:05	6:55	971.3	-206.9	993.1	1450.5
8:30	3:30	793.4	529.8	954.0	863.3	5:00	7:00	965.9	-225.3	991.8	1460.6

Analemmatic Sundial

Latitude: 60.5° N/S

Earliest Sunrise: 2:28 a.m. Latest Sunset: 9:32 p.m.
 Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 870.4 mm
 Sunrise/Sunset Markers: X = ± 184.2 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
4:55	7:05	960.0	-243.6	990.5	1470.5	2:55	9:05	691.5	-628.7	934.6	1650.9
4:50	7:10	953.7	-261.7	989.0	1480.3	2:50	9:10	675.6	-641.7	931.8	1656.1
4:45	7:15	946.9	-279.8	987.4	1489.8	2:45	9:15	659.3	-654.4	928.9	1661.2
4:40	7:20	939.7	-297.7	985.7	1499.1	2:40	9:20	642.8	-666.7	926.1	1666.1
4:35	7:25	932.0	-315.5	983.9	1508.2	2:35	9:25	625.9	-678.8	923.3	1670.8
4:30	7:30	923.9	-333.1	982.1	1517.2	2:30	9:30	608.8	-690.5	920.5	1675.4
4:25	7:35	915.3	-350.5	980.1	1525.9	2:25	9:35	591.3	-701.9	917.8	1679.8
4:20	7:40	906.3	-367.8	978.1	1534.4	2:20	9:40	573.6	-713.0	915.0	1684.0
4:15	7:45	896.9	-384.9	976.0	1542.8	2:15	9:45	555.6	-723.7	912.3	1688.1
4:10	7:50	887.0	-401.9	973.8	1550.9						
4:05	7:55	876.7	-418.6	971.5	1558.9						
4:00	8:00	866.0	-435.2	969.2	1566.7						
3:55	8:05	854.9	-451.5	966.8	1574.2						
3:50	8:10	843.4	-467.6	964.4	1581.6						
3:45	8:15	831.5	-483.5	961.9	1588.8						
3:40	8:20	819.2	-499.2	959.3	1595.8						
3:35	8:25	806.4	-514.6	956.7	1602.7						
3:30	8:30	793.4	-529.8	954.0	1609.3						
3:25	8:35	779.9	-544.8	951.3	1615.8						
3:20	8:40	766.0	-559.5	948.6	1622.1						
3:15	8:45	751.8	-573.9	945.8	1628.2						
3:10	8:50	737.3	-588.0	943.0	1634.1						
3:05	8:55	722.4	-601.9	940.2	1639.9						
3:00	9:00	707.1	-615.4	937.4	1645.5						

Analematic Sundial

Latitude: 60.5° N/S

Date Scale

Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 870.4 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-208.9	-205.0	-203.8	-198.4	-196.8	-190.0	-188.1	-180.1	-178.0	-168.9	-166.5
February	-151.1	-140.1	-137.2	-125.5	-122.6	-110.3	-107.2	-94.6	-91.4	-78.3	-75.0
March	-65.1	-51.8	-48.4	-34.9	-31.5	-17.9	-14.5	-0.9	2.5	16.1	19.4
April	39.6	52.9	56.2	69.2	72.5	85.2	88.3	100.8	103.9	115.9	118.8
May	133.1	144.0	146.6	156.8	159.2	168.6	170.8	179.3	181.4	188.8	190.5
June	199.8	204.6	205.7	209.2	210.0	212.3	212.6	213.4	213.5	212.0	212.7
July	210.0	206.7	205.7	201.2	199.9	194.0	192.4	185.4	183.5	175.5	173.4
August	159.8	149.9	147.4	136.7	134.1	122.9	119.9	108.3	105.3	93.1	90.0
September	71.2	58.4	55.1	42.0	38.8	25.5	22.3	8.9	5.6	-7.8	-11.2
October	-27.9	-41.3	-44.6	-57.8	-61.1	-74.2	-77.5	-90.3	-93.5	-106.0	-109.1
November	-127.1	-138.6	-141.4	-152.2	-154.9	-165.0	-167.3	-176.5	-178.6	-186.8	-188.7
December	-197.2	-202.9	-204.1	-208.2	-209.1	-211.8	-212.3	-213.4	-213.5	-213.0	-212.7

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	208.9	205.0	203.8	198.4	196.8	190.0	188.1	180.1	178.0	168.9	166.5
February	151.1	140.1	137.2	125.5	122.6	110.3	107.2	94.6	91.4	78.3	75.0
March	65.1	51.8	48.4	34.9	31.5	17.9	14.5	0.9	-2.5	-16.1	-19.4
April	-39.6	-52.9	-56.2	-69.2	-72.5	-85.2	-88.3	-100.8	-103.9	-115.9	-118.8
May	-133.1	-144.0	-146.6	-156.8	-159.2	-168.6	-170.8	-179.3	-181.4	-188.8	-190.5
June	-199.8	-204.6	-205.7	-209.2	-210.0	-212.3	-212.6	-213.4	-213.5	-212.0	-212.7
July	-210.0	-206.7	-205.7	-201.2	-199.9	-194.0	-192.4	-185.4	-183.5	-175.5	-173.4
August	-159.8	-149.9	-147.4	-136.7	-134.1	-122.9	-119.9	-108.3	-105.3	-93.1	-90.0
September	-71.2	-58.4	-55.1	-42.0	-38.8	-25.5	-22.3	-8.9	-5.6	7.8	11.2
October	27.9	41.3	44.6	57.8	61.1	74.2	77.5	90.3	93.5	106.0	109.1
November	127.1	138.6	141.4	152.2	154.9	165.0	167.3	176.5	178.6	186.8	188.7
December	197.2	202.9	204.1	208.2	209.1	211.8	212.3	213.4	213.5	213.0	212.7

Southern Hemisphere

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

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

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

Analemmatic Sundial

Latitude: 60.5° N/S

Earliest Sunrise: 2:28 a.m. Latest Sunset: 9:32 p.m.
 Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 1305.5 mm
 Sunrise/Sunset Markers: X = ± 276.3 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1305.5	1305.5	0.0						
11:55	12:05	32.7	1305.2	1305.6	32.7	8:25	3:35	1209.7	772.0	1435.0	1322.1
11:50	12:10	65.4	1304.3	1305.9	65.4	8:20	3:40	1228.7	748.8	1438.9	1349.0
11:45	12:15	98.1	1302.7	1306.4	98.1	8:15	3:45	1247.2	725.3	1442.8	1375.6
11:40	12:20	130.7	1300.6	1307.1	130.8	8:10	3:50	1265.1	701.5	1446.5	1401.9
11:35	12:25	163.3	1297.8	1308.0	163.5	8:05	3:55	1282.4	677.3	1450.2	1428.0
11:30	12:30	195.8	1294.4	1309.1	196.1	8:00	4:00	1299.0	652.8	1453.8	1453.8
11:25	12:35	228.2	1290.3	1310.4	228.7	7:55	4:05	1315.1	627.9	1457.3	1479.4
11:20	12:40	260.5	1285.7	1311.8	261.2	7:50	4:10	1330.5	602.8	1460.7	1504.7
11:15	12:45	292.6	1280.4	1313.5	293.7	7:45	4:15	1345.3	577.4	1464.0	1529.7
11:10	12:50	324.7	1274.6	1315.3	326.1	7:40	4:20	1359.5	551.7	1467.2	1554.5
11:05	12:55	356.5	1268.1	1317.3	358.5	7:35	4:25	1373.0	525.8	1470.2	1578.9
11:00	1:00	388.2	1261.0	1319.5	390.8	7:30	4:30	1385.8	499.6	1473.1	1603.1
10:55	1:05	419.7	1253.4	1321.8	423.0	7:25	4:35	1398.0	473.2	1475.9	1627.0
10:50	1:10	451.1	1245.1	1324.3	455.1	7:20	4:40	1409.5	446.5	1478.6	1650.7
10:45	1:15	482.2	1236.2	1326.9	487.1	7:15	4:45	1420.4	419.7	1481.1	1674.0
10:40	1:20	513.0	1226.8	1329.8	519.0	7:10	4:50	1430.6	392.6	1483.5	1697.1
10:35	1:25	543.7	1216.8	1332.7	550.9	7:05	4:55	1440.1	365.3	1485.7	1719.8
10:30	1:30	574.0	1206.2	1335.8	582.6	7:00	5:00	1448.9	337.9	1487.8	1742.3
10:25	1:35	604.1	1195.0	1339.0	614.2	6:55	5:05	1457.0	310.3	1489.7	1764.5
10:20	1:40	633.9	1183.2	1342.3	645.6	6:50	5:10	1464.4	282.6	1491.5	1786.4
10:15	1:45	663.4	1170.9	1345.8	677.0	6:45	5:15	1471.2	254.7	1493.1	1807.9
10:10	1:50	692.6	1158.0	1349.3	708.2	6:40	5:20	1477.2	226.7	1494.5	1829.2
10:05	1:55	721.5	1144.6	1353.0	739.2	6:35	5:25	1482.5	198.6	1495.8	1850.2
10:00	2:00	750.0	1130.6	1356.8	770.1	6:30	5:30	1487.2	170.4	1496.9	1870.9
9:55	2:05	778.2	1116.1	1360.6	800.9	6:25	5:35	1491.1	142.1	1497.8	1891.3
9:50	2:10	805.9	1101.1	1364.5	831.5	6:20	5:40	1494.3	113.8	1498.6	1911.3
9:45	2:15	833.4	1085.5	1368.5	861.9	6:15	5:45	1496.8	85.4	1499.2	1931.1
9:40	2:20	860.4	1069.4	1372.6	892.2	6:10	5:50	1498.6	56.9	1499.7	1950.6
9:35	2:25	887.0	1052.8	1376.7	922.3	6:05	5:55	1499.6	28.5	1499.9	1969.7
9:30	2:30	913.1	1035.7	1380.8	952.2	6:00	6:00	1500.0	0.0	1500.0	1988.6
9:25	2:35	938.9	1018.2	1385.0	981.9	5:55	6:05	1499.6	-28.5	1499.9	2007.1
9:20	2:40	964.2	1000.1	1389.2	1011.4	5:50	6:10	1498.6	-56.9	1499.7	2025.4
9:15	2:45	989.0	981.6	1393.4	1040.7	5:45	6:15	1496.8	-85.4	1499.2	2043.3
9:10	2:50	1013.4	962.5	1397.7	1069.9	5:40	6:20	1494.3	-113.8	1498.6	2060.9
9:05	2:55	1037.3	943.1	1401.9	1098.8	5:35	6:25	1491.1	-142.1	1497.8	2078.2
9:00	3:00	1060.7	923.2	1406.1	1127.5	5:30	6:30	1487.2	-170.4	1496.9	2095.2
8:55	3:05	1083.5	902.8	1410.4	1156.0	5:25	6:35	1482.5	-198.6	1495.8	2112.0
8:50	3:10	1105.9	882.0	1414.6	1184.2	5:20	6:40	1477.2	-226.7	1494.5	2128.4
8:45	3:15	1127.8	860.8	1418.7	1212.3	5:15	6:45	1471.2	-254.7	1493.1	2144.5
8:40	3:20	1149.1	839.2	1422.9	1240.1	5:10	6:50	1464.4	-282.6	1491.5	2160.2
8:35	3:25	1169.8	817.2	1427.0	1267.7	5:05	6:55	1457.0	-310.3	1489.7	2175.7
8:30	3:30	1190.0	794.8	1431.0	1295.0	5:00	7:00	1448.9	-337.9	1487.8	2190.9

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 Sunrise/Sunset Markers: X = ± 276.3 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
4:55	7:05	1440.1	-365.3	1485.7	2205.8	2:55	9:05	1037.3	-943.1	1401.9	2476.3
4:50	7:10	1430.6	-392.6	1483.5	2220.4	2:50	9:10	1013.4	-962.5	1397.7	2484.2
4:45	7:15	1420.4	-419.7	1481.1	2234.7	2:45	9:15	989.0	-981.6	1393.4	2491.8
4:40	7:20	1409.5	-446.5	1478.6	2248.7	2:40	9:20	964.2	-1000.1	1389.2	2499.1
4:35	7:25	1398.0	-473.2	1475.9	2262.4	2:35	9:25	938.9	-1018.2	1385.0	2506.2
4:30	7:30	1385.8	-499.6	1473.1	2275.7	2:30	9:30	913.1	-1035.7	1380.8	2513.1
4:25	7:35	1373.0	-525.8	1470.2	2288.8	2:25	9:35	887.0	-1052.8	1376.7	2519.6
4:20	7:40	1359.5	-551.7	1467.2	2301.7	2:20	9:40	860.4	-1069.4	1372.6	2526.0
4:15	7:45	1345.3	-577.4	1464.0	2314.2	2:15	9:45	833.4	-1085.5	1368.5	2532.1
4:10	7:50	1330.5	-602.8	1460.7	2326.4						
4:05	7:55	1315.1	-627.9	1457.3	2338.3						
4:00	8:00	1299.0	-652.8	1453.8	2350.0						
3:55	8:05	1282.4	-677.3	1450.2	2361.4						
3:50	8:10	1265.1	-701.5	1446.5	2372.4						
3:45	8:15	1247.2	-725.3	1442.8	2383.2						
3:40	8:20	1228.7	-748.8	1438.9	2393.8						
3:35	8:25	1209.7	-772.0	1435.0	2404.0						
3:30	8:30	1190.0	-794.8	1431.0	2414.0						
3:25	8:35	1169.8	-817.2	1427.0	2423.7						
3:20	8:40	1149.1	-839.2	1422.9	2433.1						
3:15	8:45	1127.8	-860.8	1418.7	2442.3						
3:10	8:50	1105.9	-882.0	1414.6	2451.2						
3:05	8:55	1083.5	-902.8	1410.4	2459.8						
3:00	9:00	1060.7	-923.2	1406.1	2468.2						

Analemmatic Sundial

Latitude: 60.5° N/S

Date Scale

Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 1305.5 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-313.4	-307.5	-305.7	-297.5	-295.1	-285.0	-282.2	-270.2	-266.9	-253.3	-249.7
February	-226.7	-210.1	-205.8	-188.3	-183.9	-165.5	-160.8	-141.8	-137.0	-117.5	-112.5
March	-97.6	-77.6	-72.6	-52.3	-47.2	-26.8	-21.8	-1.3	3.7	24.1	29.2
April	59.4	79.3	84.3	103.8	108.7	127.9	132.5	151.2	155.8	173.8	178.1
May	199.6	216.0	219.9	235.2	238.9	252.9	256.2	269.0	272.1	283.2	285.8
June	299.6	306.9	308.5	313.8	315.1	318.4	318.9	320.1	320.2	318.0	319.0
July	315.1	310.0	308.5	301.7	299.8	291.0	288.6	278.1	275.3	263.3	260.1
August	239.7	224.8	221.0	205.1	201.1	184.3	179.9	162.4	157.9	139.7	135.0
September	106.8	87.6	82.7	63.1	58.1	38.3	33.4	13.4	8.4	-11.7	-16.8
October	-41.8	-61.9	-66.8	-86.8	-91.6	-111.3	-116.2	-135.4	-140.2	-159.0	-163.6
November	-190.6	-207.9	-212.1	-228.4	-232.3	-247.4	-251.0	-264.8	-268.0	-280.1	-283.1
December	-295.7	-304.3	-306.1	-312.3	-313.7	-317.6	-318.4	-320.1	-320.2	-319.5	-319.0

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	313.4	307.5	305.7	297.5	295.1	285.0	282.2	270.2	266.9	253.3	249.7
February	226.7	210.1	205.8	188.3	183.9	165.5	160.8	141.8	137.0	117.5	112.5
March	97.6	77.6	72.6	52.3	47.2	26.8	21.8	1.3	-3.7	-24.1	-29.2
April	-59.4	-79.3	-84.3	-103.8	-108.7	-127.9	-132.5	-151.2	-155.8	-173.8	-178.1
May	-199.6	-216.0	-219.9	-235.2	-238.9	-252.9	-256.2	-269.0	-272.1	-283.2	-285.8
June	-299.6	-306.9	-308.5	-313.8	-315.1	-318.4	-318.9	-320.1	-320.2	-318.0	-319.0
July	-315.1	-310.0	-308.5	-301.7	-299.8	-291.0	-288.6	-278.1	-275.3	-263.3	-260.1
August	-239.7	-224.8	-221.0	-205.1	-201.1	-184.3	-179.9	-162.4	-157.9	-139.7	-135.0
September	-106.8	-87.6	-82.7	-63.1	-58.1	-38.3	-33.4	-13.4	-8.4	11.7	16.8
October	41.8	61.9	66.8	86.8	91.6	111.3	116.2	135.4	140.2	159.0	163.6
November	190.6	207.9	212.1	228.4	232.3	247.4	251.0	264.8	268.0	280.1	283.1
December	295.7	304.3	306.1	312.3	313.7	317.6	318.4	320.1	320.2	319.5	319.0

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: 60.5° N/S

Earliest Sunrise: 2:28 a.m. Latest Sunset: 9:32 p.m.
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1740.7 mm
 Sunrise/Sunset Markers: X = ± 368.4 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1740.7	1740.7	0.0						
11:55	12:05	43.6	1740.3	1740.8	43.6	8:25	3:35	1612.9	1029.3	1913.3	1762.8
11:50	12:10	87.2	1739.1	1741.2	87.3	8:20	3:40	1638.3	998.4	1918.6	1798.6
11:45	12:15	130.8	1737.0	1741.9	130.9	8:15	3:45	1662.9	967.1	1923.7	1834.1
11:40	12:20	174.3	1734.1	1742.8	174.4	8:10	3:50	1686.8	935.3	1928.7	1869.2
11:35	12:25	217.7	1730.4	1744.0	218.0	8:05	3:55	1709.8	903.0	1933.6	1904.0
11:30	12:30	261.1	1725.8	1745.5	261.5	8:00	4:00	1732.1	870.4	1938.4	1938.4
11:25	12:35	304.2	1720.5	1747.1	304.9	7:55	4:05	1753.5	837.3	1943.1	1972.5
11:20	12:40	347.3	1714.3	1749.1	348.3	7:50	4:10	1774.0	803.8	1947.6	2006.2
11:15	12:45	390.2	1707.3	1751.3	391.6	7:45	4:15	1793.7	769.9	1952.0	2039.6
11:10	12:50	432.9	1699.4	1753.7	434.8	7:40	4:20	1812.6	735.7	1956.2	2072.6
11:05	12:55	475.4	1690.8	1756.4	478.0	7:35	4:25	1830.6	701.1	1960.3	2105.2
11:00	1:00	517.6	1681.4	1759.3	521.0	7:30	4:30	1847.8	666.1	1964.2	2137.5
10:55	1:05	559.7	1671.2	1762.4	564.0	7:25	4:35	1864.0	630.9	1967.9	2169.4
10:50	1:10	601.4	1660.1	1765.7	606.8	7:20	4:40	1879.4	595.4	1971.4	2200.9
10:45	1:15	642.9	1648.3	1769.3	649.5	7:15	4:45	1893.9	559.5	1974.8	2232.0
10:40	1:20	684.0	1635.7	1773.0	692.0	7:10	4:50	1907.4	523.4	1978.0	2262.8
10:35	1:25	724.9	1622.4	1776.9	734.5	7:05	4:55	1920.1	487.1	1980.9	2293.1
10:30	1:30	765.4	1608.2	1781.0	776.8	7:00	5:00	1931.9	450.5	1983.7	2323.1
10:25	1:35	805.5	1593.3	1785.3	818.9	6:55	5:05	1942.7	413.7	1986.3	2352.6
10:20	1:40	845.2	1577.6	1789.8	860.8	6:50	5:10	1952.6	376.8	1988.6	2381.8
10:15	1:45	884.6	1561.2	1794.4	902.6	6:45	5:15	1961.6	339.6	1990.7	2410.6
10:10	1:50	923.5	1544.0	1799.1	944.2	6:40	5:20	1969.6	302.3	1992.7	2439.0
10:05	1:55	962.0	1526.1	1804.0	985.6	6:35	5:25	1976.7	264.8	1994.4	2466.9
10:00	2:00	1000.0	1507.5	1809.0	1026.8	6:30	5:30	1982.9	227.2	1995.9	2494.5
9:55	2:05	1037.5	1488.2	1814.1	1067.8	6:25	5:35	1988.1	189.5	1997.1	2521.7
9:50	2:10	1074.6	1468.1	1819.4	1108.6	6:20	5:40	1992.4	151.7	1998.2	2548.4
9:45	2:15	1111.1	1447.3	1824.7	1149.2	6:15	5:45	1995.7	113.8	1999.0	2574.8
9:40	2:20	1147.2	1425.9	1830.1	1189.6	6:10	5:50	1998.1	75.9	1999.5	2600.7
9:35	2:25	1182.6	1403.8	1835.5	1229.7	6:05	5:55	1999.5	38.0	1999.9	2626.3
9:30	2:30	1217.5	1381.0	1841.1	1269.5	6:00	6:00	2000.0	0.0	2000.0	2651.4
9:25	2:35	1251.8	1357.6	1846.6	1309.2	5:55	6:05	1999.5	-38.0	1999.9	2676.2
9:20	2:40	1285.6	1333.5	1852.2	1348.5	5:50	6:10	1998.1	-75.9	1999.5	2700.5
9:15	2:45	1318.7	1308.7	1857.9	1387.6	5:45	6:15	1995.7	-113.8	1999.0	2724.4
9:10	2:50	1351.2	1283.4	1863.5	1426.5	5:40	6:20	1992.4	-151.7	1998.2	2747.9
9:05	2:55	1383.0	1257.4	1869.2	1465.0	5:35	6:25	1988.1	-189.5	1997.1	2771.0
9:00	3:00	1414.2	1230.9	1874.8	1503.3	5:30	6:30	1982.9	-227.2	1995.9	2793.7
8:55	3:05	1444.7	1203.7	1880.5	1541.3	5:25	6:35	1976.7	-264.8	1994.4	2815.9
8:50	3:10	1474.6	1176.0	1886.1	1579.0	5:20	6:40	1969.6	-302.3	1992.7	2837.8
8:45	3:15	1503.7	1147.7	1891.6	1616.4	5:15	6:45	1961.6	-339.6	1990.7	2859.3
8:40	3:20	1532.1	1118.9	1897.2	1653.5	5:10	6:50	1952.6	-376.8	1988.6	2880.3
8:35	3:25	1559.8	1089.6	1902.6	1690.2	5:05	6:55	1942.7	-413.7	1986.3	2901.0
8:30	3:30	1586.7	1059.7	1908.0	1726.7	5:00	7:00	1931.9	-450.5	1983.7	2921.2

Analemmatic Sundial

Latitude: 60.5° N/S

Earliest Sunrise: 2:28 a.m. Latest Sunset: 9:32 p.m.
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1740.7 mm
 Sunrise/Sunset Markers: X = ± 368.4 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
4:55	7:05	1920.1	-487.1	1980.9	2941.1	2:55	9:05	1383.0	-1257.4	1869.2	3301.8
4:50	7:10	1907.4	-523.4	1978.0	2960.5	2:50	9:10	1351.2	-1283.4	1863.5	3312.2
4:45	7:15	1893.9	-559.5	1974.8	2979.6	2:45	9:15	1318.7	-1308.7	1857.9	3322.4
4:40	7:20	1879.4	-595.4	1971.4	2998.2	2:40	9:20	1285.6	-1333.5	1852.2	3332.2
4:35	7:25	1864.0	-630.9	1967.9	3016.5	2:35	9:25	1251.8	-1357.6	1846.6	3341.6
4:30	7:30	1847.8	-666.1	1964.2	3034.3	2:30	9:30	1217.5	-1381.0	1841.1	3350.7
4:25	7:35	1830.6	-701.1	1960.3	3051.8	2:25	9:35	1182.6	-1403.8	1835.5	3359.5
4:20	7:40	1812.6	-735.7	1956.2	3068.9	2:20	9:40	1147.2	-1425.9	1830.1	3368.0
4:15	7:45	1793.7	-769.9	1952.0	3085.6	2:15	9:45	1111.1	-1447.3	1824.7	3376.1
4:10	7:50	1774.0	-803.8	1947.6	3101.9						
4:05	7:55	1753.5	-837.3	1943.1	3117.8						
4:00	8:00	1732.1	-870.4	1938.4	3133.3						
3:55	8:05	1709.8	-903.0	1933.6	3148.5						
3:50	8:10	1686.8	-935.3	1928.7	3163.3						
3:45	8:15	1662.9	-967.1	1923.7	3177.7						
3:40	8:20	1638.3	-998.4	1918.6	3191.7						
3:35	8:25	1612.9	-1029.3	1913.3	3205.4						
3:30	8:30	1586.7	-1059.7	1908.0	3218.7						
3:25	8:35	1559.8	-1089.6	1902.6	3231.6						
3:20	8:40	1532.1	-1118.9	1897.2	3244.2						
3:15	8:45	1503.7	-1147.7	1891.6	3256.4						
3:10	8:50	1474.6	-1176.0	1886.1	3268.3						
3:05	8:55	1444.7	-1203.7	1880.5	3279.8						
3:00	9:00	1414.2	-1230.9	1874.8	3290.9						

Analematic Sundial

Latitude: 60.5° N/S

Date Scale

Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1790.7 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-417.8	-410.0	-407.5	-396.7	-393.5	-380.0	-376.3	-360.2	-355.9	-337.8	-333.0
February	-302.2	-280.2	-274.4	-251.0	-245.2	-220.7	-214.4	-189.1	-182.7	-156.7	-150.0
March	-130.2	-103.5	-96.7	-69.7	-63.0	-35.8	-29.1	-1.7	5.0	32.2	38.9
April	79.2	105.8	112.4	138.4	144.9	170.5	176.7	201.6	207.7	231.7	237.5
May	266.1	288.0	293.2	313.5	318.5	337.2	341.6	358.6	362.7	377.7	381.0
June	399.5	409.1	411.4	418.4	420.1	424.5	425.2	426.8	427.0	423.9	425.4
July	420.1	413.4	411.4	402.3	399.7	387.9	384.8	370.8	367.0	351.1	346.8
August	319.6	299.8	294.7	273.5	268.1	245.7	239.9	216.5	210.6	186.3	180.0
September	142.4	116.7	110.3	84.1	77.5	51.1	44.5	17.9	11.2	-15.6	-22.3
October	-55.8	-82.5	-89.1	-115.7	-122.1	-148.4	-154.9	-180.6	-187.0	-212.0	-218.2
November	-254.1	-277.2	-282.8	-304.5	-309.8	-329.9	-334.7	-353.0	-357.3	-373.5	-377.5
December	-394.3	-405.7	-408.1	-416.4	-418.2	-423.5	-424.5	-426.8	-427.0	-426.0	-425.4

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	417.8	410.0	407.5	396.7	393.5	380.0	376.3	360.2	355.9	337.8	333.0
February	302.2	280.2	274.4	251.0	245.2	220.7	214.4	189.1	182.7	156.7	150.0
March	130.2	103.5	96.7	69.7	63.0	35.8	29.1	1.7	-5.0	-32.2	-38.9
April	-79.2	-105.8	-112.4	-138.4	-144.9	-170.5	-176.7	-201.6	-207.7	-231.7	-237.5
May	-266.1	-288.0	-293.2	-313.5	-318.5	-337.2	-341.6	-358.6	-362.7	-377.7	-381.0
June	-399.5	-409.1	-411.4	-418.4	-420.1	-424.5	-425.2	-426.8	-427.0	-423.9	-425.4
July	-420.1	-413.4	-411.4	-402.3	-399.7	-387.9	-384.8	-370.8	-367.0	-351.1	-346.8
August	-319.6	-299.8	-294.7	-273.5	-268.1	-245.7	-239.9	-216.5	-210.6	-186.3	-180.0
September	-142.4	-116.7	-110.3	-84.1	-77.5	-51.1	-44.5	-17.9	-11.2	15.6	22.3
October	55.8	82.5	89.1	115.7	122.1	148.4	154.9	180.6	187.0	212.0	218.2
November	254.1	277.2	282.8	304.5	309.8	329.9	334.7	353.0	357.3	373.5	377.5
December	394.3	405.7	408.1	416.4	418.2	423.5	424.5	426.8	427.0	426.0	425.4

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: 60.5° N/S

Earliest Sunrise: 2:28 a.m. Latest Sunset: 9:32 p.m.
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 2175.9 mm
 Sunrise/Sunset Markers: X = ± 460.5 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	2175.9	2175.9	0.0						
11:55	12:05	54.5	2175.4	2176.1	54.5	8:25	3:35	2016.1	1286.6	2391.7	2203.5
11:50	12:10	109.0	2173.8	2176.6	109.1	8:20	3:40	2047.9	1248.0	2398.2	2248.3
11:45	12:15	163.5	2171.2	2177.4	163.6	8:15	3:45	2078.7	1208.9	2404.6	2292.6
11:40	12:20	217.9	2167.6	2178.5	218.0	8:10	3:50	2108.5	1169.1	2410.9	2336.5
11:35	12:25	272.2	2163.0	2180.0	272.5	8:05	3:55	2137.3	1128.8	2417.1	2380.0
11:30	12:30	326.3	2157.3	2181.8	326.8	8:00	4:00	2165.1	1087.9	2423.0	2423.0
11:25	12:35	380.3	2150.6	2183.9	381.2	7:55	4:05	2191.8	1046.6	2428.9	2465.6
11:20	12:40	434.1	2142.8	2186.4	435.4	7:50	4:10	2217.5	1004.7	2434.5	2507.8
11:15	12:45	487.7	2134.1	2189.1	489.5	7:45	4:15	2242.2	962.4	2440.0	2549.5
11:10	12:50	541.1	2124.3	2192.1	543.6	7:40	4:20	2265.8	919.6	2445.3	2590.8
11:05	12:55	594.2	2113.5	2195.5	597.5	7:35	4:25	2288.3	876.3	2450.3	2631.6
11:00	1:00	647.0	2101.7	2199.1	651.3	7:30	4:30	2309.7	832.7	2455.2	2671.9
10:55	1:05	699.6	2089.0	2203.0	705.0	7:25	4:35	2330.0	788.6	2459.9	2711.7
10:50	1:10	751.8	2075.2	2207.2	758.5	7:20	4:40	2349.2	744.2	2464.3	2751.1
10:45	1:15	803.6	2060.4	2211.6	811.9	7:15	4:45	2367.3	699.4	2468.5	2790.0
10:40	1:20	855.1	2044.7	2216.3	865.1	7:10	4:50	2384.3	654.3	2472.4	2828.4
10:35	1:25	906.1	2027.9	2221.2	918.1	7:05	4:55	2400.1	608.9	2476.2	2866.4
10:30	1:30	956.7	2010.3	2226.3	970.9	7:00	5:00	2414.8	563.2	2479.6	2903.8
10:25	1:35	1006.9	1991.6	2231.7	1023.6	6:55	5:05	2428.4	517.2	2482.8	2940.8
10:20	1:40	1056.5	1972.0	2237.2	1076.0	6:50	5:10	2440.7	470.9	2485.8	2977.3
10:15	1:45	1105.7	1951.5	2243.0	1128.3	6:45	5:15	2452.0	424.5	2488.4	3013.2
10:10	1:50	1154.4	1930.0	2248.9	1180.3	6:40	5:20	2462.0	377.8	2490.8	3048.7
10:05	1:55	1202.5	1907.7	2255.0	1232.0	6:35	5:25	2470.9	331.0	2493.0	3083.7
10:00	2:00	1250.0	1884.4	2261.3	1283.5	6:30	5:30	2478.6	284.0	2494.8	3118.1
9:55	2:05	1296.9	1860.2	2267.7	1334.8	6:25	5:35	2485.1	236.9	2496.4	3152.1
9:50	2:10	1343.2	1835.1	2274.2	1385.8	6:20	5:40	2490.5	189.6	2497.7	3185.5
9:45	2:15	1388.9	1809.2	2280.8	1436.5	6:15	5:45	2494.6	142.3	2498.7	3218.5
9:40	2:20	1433.9	1782.4	2287.6	1487.0	6:10	5:50	2497.6	94.9	2499.4	3250.9
9:35	2:25	1478.3	1754.7	2294.4	1537.1	6:05	5:55	2499.4	47.5	2499.9	3282.9
9:30	2:30	1521.9	1726.2	2301.3	1586.9	6:00	6:00	2500.0	0.0	2500.0	3314.3
9:25	2:35	1564.8	1696.9	2308.3	1636.5	5:55	6:05	2499.4	-47.5	2499.9	3345.2
9:20	2:40	1607.0	1666.8	2315.3	1685.7	5:50	6:10	2497.6	-94.9	2499.4	3375.6
9:15	2:45	1648.4	1635.9	2322.4	1734.6	5:45	6:15	2494.6	-142.3	2498.7	3405.5
9:10	2:50	1689.0	1604.2	2329.4	1783.1	5:40	6:20	2490.5	-189.6	2497.7	3434.9
9:05	2:55	1728.8	1571.8	2336.5	1831.3	5:35	6:25	2485.1	-236.9	2496.4	3463.7
9:00	3:00	1767.8	1538.6	2343.6	1879.1	5:30	6:30	2478.6	-284.0	2494.8	3492.1
8:55	3:05	1805.9	1504.7	2350.6	1926.6	5:25	6:35	2470.9	-331.0	2493.0	3519.9
8:50	3:10	1843.2	1470.0	2357.6	1973.7	5:20	6:40	2462.0	-377.8	2490.8	3547.3
8:45	3:15	1879.6	1434.7	2364.6	2020.5	5:15	6:45	2452.0	-424.5	2488.4	3574.1
8:40	3:20	1915.1	1398.6	2371.5	2066.8	5:10	6:50	2440.7	-470.9	2485.8	3600.4
8:35	3:25	1949.7	1361.9	2378.3	2112.8	5:05	6:55	2428.4	-517.2	2482.8	3626.2
8:30	3:30	1983.4	1324.6	2385.0	2158.4	5:00	7:00	2414.8	-563.2	2479.6	3651.5

Analemmatic Sundial

Latitude: 60.5° N/S

Earliest Sunrise: 2:28 a.m. Latest Sunset: 9:32 p.m.
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 2175.9 mm
 Sunrise/Sunset Markers: X = ± 460.5 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
4:55	7:05	2400.1	-608.9	2476.2	3676.3	2:55	9:05	1728.8	-1571.8	2336.5	4127.2
4:50	7:10	2384.3	-654.3	2472.4	3700.7	2:50	9:10	1689.0	-1604.2	2329.4	4140.3
4:45	7:15	2367.3	-699.4	2468.5	3724.5	2:45	9:15	1648.4	-1635.9	2322.4	4153.0
4:40	7:20	2349.2	-744.2	2464.3	3747.8	2:40	9:20	1607.0	-1666.8	2315.3	4165.2
4:35	7:25	2330.0	-788.6	2459.9	3770.6	2:35	9:25	1564.8	-1696.9	2308.3	4177.0
4:30	7:30	2309.7	-832.7	2455.2	3792.9	2:30	9:30	1521.9	-1726.2	2301.3	4188.4
4:25	7:35	2288.3	-876.3	2450.3	3814.7	2:25	9:35	1478.3	-1754.7	2294.4	4199.4
4:20	7:40	2265.8	-919.6	2445.3	3836.1	2:20	9:40	1433.9	-1782.4	2287.6	4210.0
4:15	7:45	2242.2	-962.4	2440.0	3856.9	2:15	9:45	1388.9	-1809.2	2280.8	4220.2
4:10	7:50	2217.5	-1004.7	2434.5	3877.3						
4:05	7:55	2191.8	-1046.6	2428.9	3897.2						
4:00	8:00	2165.1	-1087.9	2423.0	3916.6						
3:55	8:05	2137.3	-1128.8	2417.1	3935.6						
3:50	8:10	2108.5	-1169.1	2410.9	3954.1						
3:45	8:15	2078.7	-1208.9	2404.6	3972.1						
3:40	8:20	2047.9	-1248.0	2398.2	3989.6						
3:35	8:25	2016.1	-1286.6	2391.7	4006.7						
3:30	8:30	1983.4	-1324.6	2385.0	4023.3						
3:25	8:35	1949.7	-1361.9	2378.3	4039.5						
3:20	8:40	1915.1	-1398.6	2371.5	4055.2						
3:15	8:45	1879.6	-1434.7	2364.6	4070.5						
3:10	8:50	1843.2	-1470.0	2357.6	4085.3						
3:05	8:55	1805.9	-1504.7	2350.6	4099.7						
3:00	9:00	1767.8	-1538.6	2343.6	4113.7						

Analematic Sundial

Latitude: 60.5° N/S

Date Scale

Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 2175.9 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-522.3	-512.4	-509.4	-495.9	-491.9	-475.0	-470.3	-450.3	-444.9	-422.2	-416.2
February	-377.8	-350.2	-343.0	-313.8	-306.5	-275.9	-268.0	-236.4	-228.4	-195.9	-187.5
March	-162.7	-129.4	-120.9	-87.2	-78.7	-44.7	-36.3	-2.1	6.2	40.2	48.6
April	99.0	132.2	140.5	173.0	181.1	213.1	220.8	252.0	259.6	289.6	296.9
May	332.6	360.0	366.5	391.9	398.1	421.5	427.0	448.3	453.4	472.1	476.3
June	499.4	511.4	514.2	523.1	525.1	530.7	531.5	533.5	533.7	529.9	531.7
July	525.1	516.7	514.2	502.9	499.6	484.9	481.0	463.5	458.8	438.8	433.5
August	399.5	374.7	368.4	341.9	335.2	307.2	299.9	270.7	263.2	232.8	225.1
September	178.1	145.9	137.9	105.1	96.9	63.9	55.7	22.3	14.0	-19.6	-27.9
October	-69.7	-103.2	-111.4	-144.6	-152.7	-185.5	-193.7	-225.7	-233.7	-265.0	-272.7
November	-317.7	-346.5	-353.5	-380.6	-387.2	-412.4	-418.4	-441.3	-446.6	-466.9	-471.8
December	-492.9	-507.2	-510.2	-520.5	-522.8	-529.4	-530.7	-533.5	-533.7	-532.5	-531.7

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	522.3	512.4	509.4	495.9	491.9	475.0	470.3	450.3	444.9	422.2	416.2
February	377.8	350.2	343.0	313.8	306.5	275.9	268.0	236.4	228.4	195.9	187.5
March	162.7	129.4	120.9	87.2	78.7	44.7	36.3	2.1	-6.2	-40.2	-48.6
April	-99.0	-132.2	-140.5	-173.0	-181.1	-213.1	-220.8	-252.0	-259.6	-289.6	-296.9
May	-332.6	-360.0	-366.5	-391.9	-398.1	-421.5	-427.0	-448.3	-453.4	-472.1	-476.3
June	-499.4	-511.4	-514.2	-523.1	-525.1	-530.7	-531.5	-533.5	-533.7	-529.9	-531.7
July	-525.1	-516.7	-514.2	-502.9	-499.6	-484.9	-481.0	-463.5	-458.8	-438.8	-433.5
August	-399.5	-374.7	-368.4	-341.9	-335.2	-307.2	-299.9	-270.7	-263.2	-232.8	-225.1
September	-178.1	-145.9	-137.9	-105.1	-96.9	-63.9	-55.7	-22.3	-14.0	19.6	27.9
October	69.7	103.2	111.4	144.6	152.7	185.5	193.7	225.7	233.7	265.0	272.7
November	317.7	346.5	353.5	380.6	387.2	412.4	418.4	441.3	446.6	466.9	471.8
December	492.9	507.2	510.2	520.5	522.8	529.4	530.7	533.5	533.7	532.5	531.7

Southern Hemisphere

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

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

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