

Analemmatic Sundial

Latitude: 54.0° N/S

Earliest Sunrise: 3:26 a.m. Latest Sunset: 8:34 p.m.
 Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 809.0 mm
 Sunrise/Sunset Markers: X = ± 297.9 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	809.0	809.0	0.0						
11:55	12:05	21.8	808.8	809.1	21.8	8:25	3:35	806.4	478.4	937.7	871.6
11:50	12:10	43.6	808.2	809.4	43.6	8:20	3:40	819.2	464.0	941.5	888.8
11:45	12:15	65.4	807.3	809.9	65.4	8:15	3:45	831.5	449.5	945.2	905.9
11:40	12:20	87.2	805.9	810.6	87.2	8:10	3:50	843.4	434.7	948.8	922.7
11:35	12:25	108.9	804.2	811.5	109.0	8:05	3:55	854.9	419.7	952.4	939.4
11:30	12:30	130.5	802.1	812.6	130.7	8:00	4:00	866.0	404.5	955.8	955.8
11:25	12:35	152.1	799.6	813.9	152.4	7:55	4:05	876.7	389.1	959.2	972.1
11:20	12:40	173.6	796.7	815.4	174.1	7:50	4:10	887.0	373.6	962.5	988.1
11:15	12:45	195.1	793.5	817.1	195.7	7:45	4:15	896.9	357.8	965.6	1004.0
11:10	12:50	216.4	789.8	819.0	217.3	7:40	4:20	906.3	341.9	968.7	1019.6
11:05	12:55	237.7	785.8	821.0	238.8	7:35	4:25	915.3	325.8	971.6	1035.0
11:00	1:00	258.8	781.5	823.2	260.3	7:30	4:30	923.9	309.6	974.4	1050.2
10:55	1:05	279.8	776.7	825.6	281.7	7:25	4:35	932.0	293.2	977.0	1065.2
10:50	1:10	300.7	771.6	828.1	303.0	7:20	4:40	939.7	276.7	979.6	1080.0
10:45	1:15	321.4	766.1	830.8	324.3	7:15	4:45	946.9	260.0	982.0	1094.6
10:40	1:20	342.0	760.2	833.6	345.5	7:10	4:50	953.7	243.3	984.3	1108.9
10:35	1:25	362.4	754.0	836.6	366.6	7:05	4:55	960.0	226.4	986.4	1123.0
10:30	1:30	382.7	747.4	839.7	387.6	7:00	5:00	965.9	209.4	988.4	1136.9
10:25	1:35	402.7	740.5	842.9	408.5	6:55	5:05	971.3	192.3	990.2	1150.6
10:20	1:40	422.6	733.2	846.3	429.4	6:50	5:10	976.3	175.1	991.9	1164.0
10:15	1:45	442.3	725.6	849.8	450.1	6:45	5:15	980.8	157.8	993.4	1177.3
10:10	1:50	461.7	717.6	853.3	470.7	6:40	5:20	984.8	140.5	994.8	1190.3
10:05	1:55	481.0	709.3	857.0	491.2	6:35	5:25	988.4	123.1	996.0	1203.1
10:00	2:00	500.0	700.6	860.7	511.6	6:30	5:30	991.4	105.6	997.1	1215.6
9:55	2:05	518.8	691.6	864.6	531.9	6:25	5:35	994.1	88.1	998.0	1228.0
9:50	2:10	537.3	682.3	868.5	552.0	6:20	5:40	996.2	70.5	998.7	1240.1
9:45	2:15	555.6	672.7	872.4	572.1	6:15	5:45	997.9	52.9	999.3	1252.0
9:40	2:20	573.6	662.7	876.5	591.9	6:10	5:50	999.0	35.3	999.7	1263.6
9:35	2:25	591.3	652.4	880.5	611.7	6:05	5:55	999.8	17.6	999.9	1275.1
9:30	2:30	608.8	641.8	884.6	631.3	6:00	6:00	1000.0	0.0	1000.0	1286.3
9:25	2:35	625.9	630.9	888.7	650.8	5:55	6:05	999.8	-17.6	999.9	1297.3
9:20	2:40	642.8	619.7	892.9	670.1	5:50	6:10	999.0	-35.3	999.7	1308.0
9:15	2:45	659.3	608.3	897.1	689.2	5:45	6:15	997.9	-52.9	999.3	1318.6
9:10	2:50	675.6	596.5	901.2	708.2	5:40	6:20	996.2	-70.5	998.7	1328.9
9:05	2:55	691.5	584.4	905.4	727.1	5:35	6:25	994.1	-88.1	998.0	1339.0
9:00	3:00	707.1	572.1	909.5	745.8	5:30	6:30	991.4	-105.6	997.1	1348.9
8:55	3:05	722.4	559.4	913.7	764.3	5:25	6:35	988.4	-123.1	996.0	1358.5
8:50	3:10	737.3	546.6	917.8	782.6	5:20	6:40	984.8	-140.5	994.8	1368.0
8:45	3:15	751.8	533.4	921.8	800.8	5:15	6:45	980.8	-157.8	993.4	1377.2
8:40	3:20	766.0	520.0	925.9	818.7	5:10	6:50	976.3	-175.1	991.9	1386.2
8:35	3:25	779.9	506.4	929.9	836.5	5:05	6:55	971.3	-192.3	990.2	1395.0
8:30	3:30	793.4	492.5	933.8	854.2	5:00	7:00	965.9	-209.4	988.4	1403.6

Analemmatic Sundial

Latitude: 54.0° N/S

Earliest Sunrise: 3:26 a.m. Latest Sunset: 8:34 p.m.
 Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 809.0 mm
 Sunrise/Sunset Markers: X = ± 297.9 mm

Local Time		X	Y	Z	W
4:55	7:05	960.0	-226.4	986.4	1412.0
4:50	7:10	953.7	-243.3	984.3	1420.2
4:45	7:15	946.9	-260.0	982.0	1428.1
4:40	7:20	939.7	-276.7	979.6	1435.9
4:35	7:25	932.0	-293.2	977.0	1443.5
4:30	7:30	923.9	-309.6	974.4	1450.8
4:25	7:35	915.3	-325.8	971.6	1458.0
4:20	7:40	906.3	-341.9	968.7	1464.9
4:15	7:45	896.9	-357.8	965.6	1471.7
4:10	7:50	887.0	-373.6	962.5	1478.3
4:05	7:55	876.7	-389.1	959.2	1484.7
4:00	8:00	866.0	-404.5	955.8	1490.9
3:55	8:05	854.9	-419.7	952.4	1496.9
3:50	8:10	843.4	-434.7	948.8	1502.7
3:45	8:15	831.5	-449.5	945.2	1508.4
3:40	8:20	819.2	-464.0	941.5	1513.8
3:35	8:25	806.4	-478.4	937.7	1519.1
3:30	8:30	793.4	-492.5	933.8	1524.3
3:25	8:35	779.9	-506.4	929.9	1529.2
3:20	8:40	766.0	-520.0	925.9	1534.0
3:15	8:45	751.8	-533.4	921.8	1538.6

Analematic Sundial

Latitude: 54.0° N/S

Date Scale

Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 809.0 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-249.4	-244.7	-243.2	-236.8	-234.9	-226.8	-224.6	-215.0	-212.4	-201.6	-198.7
February	-180.4	-167.2	-163.8	-149.8	-146.3	-131.7	-127.9	-112.9	-109.0	-93.5	-89.5
March	-77.7	-61.8	-57.7	-41.6	-37.6	-21.3	-17.3	-1.0	3.0	19.2	23.2
April	47.3	63.1	67.1	82.6	86.5	101.7	105.4	120.3	124.0	138.3	141.8
May	158.8	171.9	175.0	187.1	190.1	201.2	203.9	214.1	216.5	225.4	227.4
June	238.4	244.2	245.5	249.7	250.7	253.4	253.7	254.7	254.8	253.0	253.9
July	250.7	246.7	245.5	240.1	238.6	231.5	229.6	221.3	219.1	209.5	207.0
August	190.8	178.9	175.9	163.2	160.0	146.7	143.2	129.2	125.7	111.2	107.5
September	85.0	69.7	65.8	50.2	46.3	30.5	26.6	10.7	6.7	-9.3	-13.3
October	-33.3	-49.3	-53.2	-69.0	-72.9	-88.6	-92.5	-107.8	-111.6	-126.5	-130.2
November	-151.7	-165.4	-168.8	-181.7	-184.9	-196.9	-199.8	-210.7	-213.2	-222.9	-225.3
December	-235.3	-242.1	-243.6	-248.5	-249.6	-252.8	-253.4	-254.7	-254.8	-254.2	-253.9

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	249.4	244.7	243.2	236.8	234.9	226.8	224.6	215.0	212.4	201.6	198.7
February	180.4	167.2	163.8	149.8	146.3	131.7	127.9	112.9	109.0	93.5	89.5
March	77.7	61.8	57.7	41.6	37.6	21.3	17.3	1.0	-3.0	-19.2	-23.2
April	-47.3	-63.1	-67.1	-82.6	-86.5	-101.7	-105.4	-120.3	-124.0	-138.3	-141.8
May	-158.8	-171.9	-175.0	-187.1	-190.1	-201.2	-203.9	-214.1	-216.5	-225.4	-227.4
June	-238.4	-244.2	-245.5	-249.7	-250.7	-253.4	-253.7	-254.7	-254.8	-253.0	-253.9
July	-250.7	-246.7	-245.5	-240.1	-238.6	-231.5	-229.6	-221.3	-219.1	-209.5	-207.0
August	-190.8	-178.9	-175.9	-163.2	-160.0	-146.7	-143.2	-129.2	-125.7	-111.2	-107.5
September	-85.0	-69.7	-65.8	-50.2	-46.3	-30.5	-26.6	-10.7	-6.7	9.3	13.3
October	33.3	49.3	53.2	69.0	72.9	88.6	92.5	107.8	111.6	126.5	130.2
November	151.7	165.4	168.8	181.7	184.9	196.9	199.8	210.7	213.2	222.9	225.3
December	235.3	242.1	243.6	248.5	249.6	252.8	253.4	254.7	254.8	254.2	253.9

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: 54.0° N/S

Earliest Sunrise: 3:26 a.m. Latest Sunset: 8:34 p.m.
 Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 1213.5 mm
 Sunrise/Sunset Markers: X = ± 446.9 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1213.5	1213.5	0.0						
11:55	12:05	32.7	1213.2	1213.7	32.7	8:25	3:35	1209.7	717.6	1406.5	1307.4
11:50	12:10	65.4	1212.4	1214.1	65.4	8:20	3:40	1228.7	696.0	1412.2	1333.2
11:45	12:15	98.1	1210.9	1214.9	98.1	8:15	3:45	1247.2	674.2	1417.8	1358.8
11:40	12:20	130.7	1208.9	1216.0	130.8	8:10	3:50	1265.1	652.0	1423.2	1384.1
11:35	12:25	163.3	1206.3	1217.3	163.5	8:05	3:55	1282.4	629.5	1428.6	1409.1
11:30	12:30	195.8	1203.1	1219.0	196.1	8:00	4:00	1299.0	606.8	1433.8	1433.8
11:25	12:35	228.2	1199.4	1220.9	228.6	7:55	4:05	1315.1	583.7	1438.8	1458.1
11:20	12:40	260.5	1195.1	1223.1	261.1	7:50	4:10	1330.5	560.3	1443.7	1482.2
11:15	12:45	292.6	1190.2	1225.7	293.6	7:45	4:15	1345.3	536.7	1448.4	1506.0
11:10	12:50	324.7	1184.8	1228.4	325.9	7:40	4:20	1359.5	512.9	1453.0	1529.4
11:05	12:55	356.5	1178.7	1231.5	358.2	7:35	4:25	1373.0	488.7	1457.4	1552.5
11:00	1:00	388.2	1172.2	1234.8	390.4	7:30	4:30	1385.8	464.4	1461.6	1575.3
10:55	1:05	419.7	1165.0	1238.4	422.5	7:25	4:35	1398.0	439.8	1465.6	1597.8
10:50	1:10	451.1	1157.4	1242.1	454.5	7:20	4:40	1409.5	415.1	1469.4	1620.0
10:45	1:15	482.2	1149.1	1246.2	486.4	7:15	4:45	1420.4	390.1	1473.0	1641.8
10:40	1:20	513.0	1140.3	1250.4	518.2	7:10	4:50	1430.6	364.9	1476.4	1663.3
10:35	1:25	543.7	1131.0	1254.9	549.9	7:05	4:55	1440.1	339.6	1479.6	1684.5
10:30	1:30	574.0	1121.2	1259.6	581.4	7:00	5:00	1448.9	314.1	1482.5	1705.4
10:25	1:35	604.1	1110.8	1264.4	612.8	6:55	5:05	1457.0	288.4	1485.3	1725.9
10:20	1:40	633.9	1099.8	1269.4	644.0	6:50	5:10	1464.4	262.7	1487.8	1746.1
10:15	1:45	663.4	1088.4	1274.6	675.1	6:45	5:15	1471.2	236.7	1490.1	1765.9
10:10	1:50	692.6	1076.4	1280.0	706.1	6:40	5:20	1477.2	210.7	1492.2	1785.4
10:05	1:55	721.5	1063.9	1285.5	736.8	6:35	5:25	1482.5	184.6	1494.0	1804.6
10:00	2:00	750.0	1050.9	1291.1	767.4	6:30	5:30	1487.2	158.4	1495.6	1823.4
9:55	2:05	778.2	1037.5	1296.9	797.8	6:25	5:35	1491.1	132.1	1496.9	1842.0
9:50	2:10	805.9	1023.5	1302.7	828.1	6:20	5:40	1494.3	105.8	1498.0	1860.1
9:45	2:15	833.4	1009.0	1308.7	858.1	6:15	5:45	1496.8	79.4	1498.9	1877.9
9:40	2:20	860.4	994.1	1314.7	887.9	6:10	5:50	1498.6	52.9	1499.5	1895.4
9:35	2:25	887.0	978.6	1320.8	917.5	6:05	5:55	1499.6	26.5	1499.9	1912.6
9:30	2:30	913.1	962.8	1326.9	947.0	6:00	6:00	1500.0	0.0	1500.0	1929.4
9:25	2:35	938.9	946.4	1333.1	976.1	5:55	6:05	1499.6	-26.5	1499.9	1945.9
9:20	2:40	964.2	929.6	1339.3	1005.1	5:50	6:10	1498.6	-52.9	1499.5	1962.0
9:15	2:45	989.0	912.4	1345.6	1033.9	5:45	6:15	1496.8	-79.4	1498.9	1977.9
9:10	2:50	1013.4	894.7	1351.8	1062.4	5:40	6:20	1494.3	-105.8	1498.0	1993.3
9:05	2:55	1037.3	876.6	1358.1	1090.6	5:35	6:25	1491.1	-132.1	1496.9	2008.5
9:00	3:00	1060.7	858.1	1364.3	1118.6	5:30	6:30	1487.2	-158.4	1495.6	2023.3
8:55	3:05	1083.5	839.2	1370.5	1146.4	5:25	6:35	1482.5	-184.6	1494.0	2037.8
8:50	3:10	1105.9	819.8	1376.7	1173.9	5:20	6:40	1477.2	-210.7	1492.2	2052.0
8:45	3:15	1127.8	800.1	1382.8	1201.1	5:15	6:45	1471.2	-236.7	1490.1	2065.8
8:40	3:20	1149.1	780.0	1388.8	1228.1	5:10	6:50	1464.4	-262.7	1487.8	2079.4
8:35	3:25	1169.8	759.6	1394.8	1254.8	5:05	6:55	1457.0	-288.4	1485.3	2092.6
8:30	3:30	1190.0	738.7	1400.7	1281.2	5:00	7:00	1448.9	-314.1	1482.5	2105.4

Analemmatic Sundial

Latitude: 54.0° N/S

Earliest Sunrise: 3:26 a.m. Latest Sunset: 8:34 p.m.
 Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 1213.5 mm
 Sunrise/Sunset Markers: X = ± 446.9 mm

Local Time		X	Y	Z	W
4:55	7:05	1440.1	-339.6	1479.6	2118.0
4:50	7:10	1430.6	-364.9	1476.4	2130.3
4:45	7:15	1420.4	-390.1	1473.0	2142.2
4:40	7:20	1409.5	-415.1	1469.4	2153.8
4:35	7:25	1398.0	-439.8	1465.6	2165.2
4:30	7:30	1385.8	-464.4	1461.6	2176.2
4:25	7:35	1373.0	-488.7	1457.4	2187.0
4:20	7:40	1359.5	-512.9	1453.0	2197.4
4:15	7:45	1345.3	-536.7	1448.4	2207.5
4:10	7:50	1330.5	-560.3	1443.7	2217.4
4:05	7:55	1315.1	-583.7	1438.8	2227.0
4:00	8:00	1299.0	-606.8	1433.8	2236.3
3:55	8:05	1282.4	-629.5	1428.6	2245.3
3:50	8:10	1265.1	-652.0	1423.2	2254.0
3:45	8:15	1247.2	-674.2	1417.8	2262.5
3:40	8:20	1228.7	-696.0	1412.2	2270.7
3:35	8:25	1209.7	-717.6	1406.5	2278.7
3:30	8:30	1190.0	-738.7	1400.7	2286.4
3:25	8:35	1169.8	-759.6	1394.8	2293.8
3:20	8:40	1149.1	-780.0	1388.8	2301.0
3:15	8:45	1127.8	-800.1	1382.8	2308.0

Analemmatic Sundial

Latitude: 54.0° N/S

Date Scale

Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 1213.5 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-374.1	-367.0	-364.8	-355.1	-352.3	-340.2	-336.9	-322.5	-318.6	-302.4	-298.1
February	-270.6	-250.8	-245.7	-224.7	-219.5	-197.6	-191.9	-169.3	-163.6	-140.3	-134.3
March	-116.5	-92.7	-86.6	-62.4	-56.4	-32.0	-26.0	-1.5	4.5	28.8	34.8
April	70.9	94.7	100.6	123.9	129.7	152.6	158.2	180.5	186.0	207.4	212.6
May	238.2	257.8	262.5	280.7	285.1	301.9	305.8	321.1	324.7	338.1	341.1
June	357.7	366.3	368.3	374.6	376.1	380.1	380.6	382.1	382.3	379.5	380.8
July	376.1	370.1	368.3	360.2	357.8	347.3	344.5	331.9	328.6	314.3	310.5
August	286.1	268.4	263.8	244.8	240.0	220.0	214.8	193.8	188.5	166.8	161.2
September	127.5	104.5	98.7	75.3	69.4	45.7	39.9	16.0	10.0	-14.0	-20.0
October	-49.9	-73.9	-79.8	-103.6	-109.4	-132.9	-138.7	-161.7	-167.4	-189.8	-195.3
November	-227.5	-248.2	-253.2	-272.6	-277.3	-295.3	-299.6	-316.0	-319.9	-334.4	-337.9
December	-353.0	-363.2	-365.4	-372.8	-374.4	-379.2	-380.1	-382.1	-382.3	-381.4	-380.8

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	374.1	367.0	364.8	355.1	352.3	340.2	336.9	322.5	318.6	302.4	298.1
February	270.6	250.8	245.7	224.7	219.5	197.6	191.9	169.3	163.6	140.3	134.3
March	116.5	92.7	86.6	62.4	56.4	32.0	26.0	1.5	-4.5	-28.8	-34.8
April	-70.9	-94.7	-100.6	-123.9	-129.7	-152.6	-158.2	-180.5	-186.0	-207.4	-212.6
May	-238.2	-257.8	-262.5	-280.7	-285.1	-301.9	-305.8	-321.1	-324.7	-338.1	-341.1
June	-357.7	-366.3	-368.3	-374.6	-376.1	-380.1	-380.6	-382.1	-382.3	-379.5	-380.8
July	-376.1	-370.1	-368.3	-360.2	-357.8	-347.3	-344.5	-331.9	-328.6	-314.3	-310.5
August	-286.1	-268.4	-263.8	-244.8	-240.0	-220.0	-214.8	-193.8	-188.5	-166.8	-161.2
September	-127.5	-104.5	-98.7	-75.3	-69.4	-45.7	-39.9	-16.0	-10.0	14.0	20.0
October	49.9	73.9	79.8	103.6	109.4	132.9	138.7	161.7	167.4	189.8	195.3
November	227.5	248.2	253.2	272.6	277.3	295.3	299.6	316.0	319.9	334.4	337.9
December	353.0	363.2	365.4	372.8	374.4	379.2	380.1	382.1	382.3	381.4	380.8

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: 54.0° N/S

Earliest Sunrise: 3:26 a.m. Latest Sunset: 8:34 p.m.
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1618.0 mm
 Sunrise/Sunset Markers: X = ± 595.8 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1618.0	1618.0	0.0						
11:55	12:05	43.6	1617.6	1618.2	43.6	8:25	3:35	1612.9	956.8	1875.3	1743.2
11:50	12:10	87.2	1616.5	1618.8	87.3	8:20	3:40	1638.3	928.1	1882.9	1777.7
11:45	12:15	130.8	1614.6	1619.9	130.9	8:15	3:45	1662.9	898.9	1890.4	1811.8
11:40	12:20	174.3	1611.9	1621.3	174.4	8:10	3:50	1686.8	869.4	1897.6	1845.5
11:35	12:25	217.7	1608.4	1623.1	217.9	8:05	3:55	1709.8	839.4	1904.8	1878.8
11:30	12:30	261.1	1604.2	1625.3	261.4	8:00	4:00	1732.1	809.0	1911.7	1911.7
11:25	12:35	304.2	1599.2	1627.9	304.8	7:55	4:05	1753.5	778.3	1918.4	1944.2
11:20	12:40	347.3	1593.5	1630.9	348.2	7:50	4:10	1774.0	747.1	1924.9	1976.3
11:15	12:45	390.2	1586.9	1634.2	391.4	7:45	4:15	1793.7	715.6	1931.2	2007.9
11:10	12:50	432.9	1579.7	1637.9	434.6	7:40	4:20	1812.6	683.8	1937.3	2039.2
11:05	12:55	475.4	1571.7	1642.0	477.6	7:35	4:25	1830.6	651.7	1943.2	2070.0
11:00	1:00	517.6	1562.9	1646.4	520.6	7:30	4:30	1847.8	619.2	1948.7	2100.5
10:55	1:05	559.7	1553.4	1651.1	563.4	7:25	4:35	1864.0	586.4	1954.1	2130.4
10:50	1:10	601.4	1543.1	1656.2	606.1	7:20	4:40	1879.4	553.4	1959.2	2160.0
10:45	1:15	642.9	1532.2	1661.6	648.6	7:15	4:45	1893.9	520.1	1964.0	2189.1
10:40	1:20	684.0	1520.5	1667.2	691.0	7:10	4:50	1907.4	486.6	1968.5	2217.8
10:35	1:25	724.9	1508.0	1673.2	733.2	7:05	4:55	1920.1	452.8	1972.8	2246.0
10:30	1:30	765.4	1494.9	1679.4	775.2	7:00	5:00	1931.9	418.8	1976.7	2273.8
10:25	1:35	805.5	1481.0	1685.9	817.1	6:55	5:05	1942.7	384.6	1980.4	2301.2
10:20	1:40	845.2	1466.4	1692.6	858.7	6:50	5:10	1952.6	350.2	1983.7	2328.1
10:15	1:45	884.6	1451.2	1699.5	900.2	6:45	5:15	1961.6	315.7	1986.8	2354.6
10:10	1:50	923.5	1435.2	1706.7	941.4	6:40	5:20	1969.6	281.0	1989.6	2380.6
10:05	1:55	962.0	1418.6	1714.0	982.4	6:35	5:25	1976.7	246.1	1992.0	2406.1
10:00	2:00	1000.0	1401.3	1721.5	1023.2	6:30	5:30	1982.9	211.2	1994.1	2431.3
9:55	2:05	1037.5	1383.3	1729.1	1063.8	6:25	5:35	1988.1	176.2	1995.9	2455.9
9:50	2:10	1074.6	1364.6	1736.9	1104.1	6:20	5:40	1992.4	141.0	1997.4	2480.2
9:45	2:15	1111.1	1345.3	1744.9	1144.1	6:15	5:45	1995.7	105.8	1998.5	2503.9
9:40	2:20	1147.2	1325.4	1752.9	1183.9	6:10	5:50	1998.1	70.6	1999.3	2527.3
9:35	2:25	1182.6	1304.9	1761.0	1223.4	6:05	5:55	1999.5	35.3	1999.8	2550.1
9:30	2:30	1217.5	1283.7	1769.2	1262.6	6:00	6:00	2000.0	0.0	2000.0	2572.6
9:25	2:35	1251.8	1261.9	1777.5	1301.5	5:55	6:05	1999.5	-35.3	1999.8	2594.5
9:20	2:40	1285.6	1239.5	1785.8	1340.2	5:50	6:10	1998.1	-70.6	1999.3	2616.1
9:15	2:45	1318.7	1216.5	1794.1	1378.5	5:45	6:15	1995.7	-105.8	1998.5	2637.2
9:10	2:50	1351.2	1192.9	1802.4	1416.5	5:40	6:20	1992.4	-141.0	1997.4	2657.8
9:05	2:55	1383.0	1168.8	1810.8	1454.2	5:35	6:25	1988.1	-176.2	1995.9	2678.0
9:00	3:00	1414.2	1144.1	1819.1	1491.5	5:30	6:30	1982.9	-211.2	1994.1	2697.8
8:55	3:05	1444.7	1118.9	1827.3	1528.5	5:25	6:35	1976.7	-246.1	1992.0	2717.1
8:50	3:10	1474.6	1093.1	1835.5	1565.2	5:20	6:40	1969.6	-281.0	1989.6	2736.0
8:45	3:15	1503.7	1066.8	1843.7	1601.5	5:15	6:45	1961.6	-315.7	1986.8	2754.4
8:40	3:20	1532.1	1040.1	1851.8	1637.5	5:10	6:50	1952.6	-350.2	1983.7	2772.5
8:35	3:25	1559.8	1012.8	1859.7	1673.1	5:05	6:55	1942.7	-384.6	1980.4	2790.1
8:30	3:30	1586.7	985.0	1867.6	1708.3	5:00	7:00	1931.9	-418.8	1976.7	2807.3

Analemmatic Sundial

Latitude: 54.0° N/S

Earliest Sunrise: 3:26 a.m. Latest Sunset: 8:34 p.m.
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1618.0 mm
 Sunrise/Sunset Markers: X = ± 595.8 mm

Local Time	X	Y	Z	W	
4:55	7:05	1920.1	-452.8	1972.8	2824.0
4:50	7:10	1907.4	-486.6	1968.5	2840.3
4:45	7:15	1893.9	-520.1	1964.0	2856.3
4:40	7:20	1879.4	-553.4	1959.2	2871.8
4:35	7:25	1864.0	-586.4	1954.1	2886.9
4:30	7:30	1847.8	-619.2	1948.7	2901.6
4:25	7:35	1830.6	-651.7	1943.2	2915.9
4:20	7:40	1812.6	-683.8	1937.3	2929.9
4:15	7:45	1793.7	-715.6	1931.2	2943.4
4:10	7:50	1774.0	-747.1	1924.9	2956.5
4:05	7:55	1753.5	-778.3	1918.4	2969.3
4:00	8:00	1732.1	-809.0	1911.7	2981.7
3:55	8:05	1709.8	-839.4	1904.8	2993.7
3:50	8:10	1686.8	-869.4	1897.6	3005.4
3:45	8:15	1662.9	-898.9	1890.4	3016.7
3:40	8:20	1638.3	-928.1	1882.9	3027.7
3:35	8:25	1612.9	-956.8	1875.3	3038.3
3:30	8:30	1586.7	-985.0	1867.6	3048.5
3:25	8:35	1559.8	-1012.8	1859.7	3058.4
3:20	8:40	1532.1	-1040.1	1851.8	3068.0
3:15	8:45	1503.7	-1066.8	1843.7	3077.3

Analematic Sundial

Latitude: 54.0° N/S

Date Scale

Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1618.0 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-498.8	-489.3	-486.5	-473.5	-469.7	-453.6	-449.1	-430.0	-424.9	-403.2	-397.5
February	-360.8	-334.4	-327.6	-299.6	-292.7	-263.4	-255.9	-225.7	-218.1	-187.0	-179.0
March	-155.4	-123.6	-115.5	-83.2	-75.2	-42.7	-34.7	-2.1	6.0	38.4	46.4
April	94.6	126.3	134.1	165.2	173.0	203.5	210.9	240.7	247.9	276.6	283.5
May	317.6	343.8	350.0	374.3	380.2	402.5	407.8	428.1	433.0	450.8	454.8
June	476.9	488.4	491.0	499.5	501.4	506.8	507.5	509.4	509.7	506.0	507.7
July	501.4	493.4	491.0	480.2	477.1	463.1	459.3	442.6	438.1	419.1	414.0
August	381.5	357.8	351.8	326.5	320.1	293.3	286.4	258.5	251.4	222.3	214.9
September	170.0	139.3	131.7	100.4	92.5	61.0	53.2	21.3	13.3	-18.7	-26.7
October	-66.5	-98.5	-106.4	-138.1	-145.8	-177.2	-184.9	-215.5	-223.2	-253.1	-260.4
November	-303.4	-330.9	-337.5	-363.5	-369.8	-393.8	-399.5	-421.4	-426.5	-445.9	-450.6
December	-470.7	-484.3	-487.2	-497.1	-499.2	-505.6	-506.8	-509.4	-509.7	-508.5	-507.7

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	498.8	489.3	486.5	473.5	469.7	453.6	449.1	430.0	424.9	403.2	397.5
February	360.8	334.4	327.6	299.6	292.7	263.4	255.9	225.7	218.1	187.0	179.0
March	155.4	123.6	115.5	83.2	75.2	42.7	34.7	2.1	-6.0	-38.4	-46.4
April	-94.6	-126.3	-134.1	-165.2	-173.0	-203.5	-210.9	-240.7	-247.9	-276.6	-283.5
May	-317.6	-343.8	-350.0	-374.3	-380.2	-402.5	-407.8	-428.1	-433.0	-450.8	-454.8
June	-476.9	-488.4	-491.0	-499.5	-501.4	-506.8	-507.5	-509.4	-509.7	-506.0	-507.7
July	-501.4	-493.4	-491.0	-480.2	-477.1	-463.1	-459.3	-442.6	-438.1	-419.1	-414.0
August	-381.5	-357.8	-351.8	-326.5	-320.1	-293.3	-286.4	-258.5	-251.4	-222.3	-214.9
September	-170.0	-139.3	-131.7	-100.4	-92.5	-61.0	-53.2	-21.3	-13.3	18.7	26.7
October	66.5	98.5	106.4	138.1	145.8	177.2	184.9	215.5	223.2	253.1	260.4
November	303.4	330.9	337.5	363.5	369.8	393.8	399.5	421.4	426.5	445.9	450.6
December	470.7	484.3	487.2	497.1	499.2	505.6	506.8	509.4	509.7	508.5	507.7

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: 54.0° N/S

Earliest Sunrise: 3:26 a.m. Latest Sunset: 8:34 p.m.
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 2022.5 mm
 Sunrise/Sunset Markers: X = ± 744.8 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	2022.5	2022.5	0.0						
11:55	12:05	54.5	2022.1	2022.8	54.5	8:25	3:35	2016.1	1195.9	2344.1	2179.0
11:50	12:10	109.0	2020.6	2023.6	109.1	8:20	3:40	2047.9	1160.1	2353.6	2222.1
11:45	12:15	163.5	2018.2	2024.8	163.6	8:15	3:45	2078.7	1123.7	2362.9	2264.7
11:40	12:20	217.9	2014.8	2026.6	218.0	8:10	3:50	2108.5	1086.7	2372.1	2306.8
11:35	12:25	272.2	2010.5	2028.9	272.4	8:05	3:55	2137.3	1049.2	2380.9	2348.5
11:30	12:30	326.3	2005.2	2031.6	326.8	8:00	4:00	2165.1	1011.3	2389.6	2389.6
11:25	12:35	380.3	1999.0	2034.9	381.0	7:55	4:05	2191.8	972.8	2398.0	2430.2
11:20	12:40	434.1	1991.8	2038.6	435.2	7:50	4:10	2217.5	933.9	2406.2	2470.3
11:15	12:45	487.7	1983.7	2042.8	489.3	7:45	4:15	2242.2	894.5	2414.0	2509.9
11:10	12:50	541.1	1974.6	2047.4	543.2	7:40	4:20	2265.8	854.8	2421.6	2549.0
11:05	12:55	594.2	1964.6	2052.5	597.0	7:35	4:25	2288.3	814.6	2428.9	2587.5
11:00	1:00	647.0	1953.6	2058.0	650.7	7:30	4:30	2309.7	774.0	2435.9	2625.6
10:55	1:05	699.6	1941.7	2063.9	704.2	7:25	4:35	2330.0	733.0	2442.6	2663.0
10:50	1:10	751.8	1928.9	2070.2	757.6	7:20	4:40	2349.2	691.8	2449.0	2700.0
10:45	1:15	803.6	1915.2	2077.0	810.7	7:15	4:45	2367.3	650.1	2455.0	2736.4
10:40	1:20	855.1	1900.6	2084.1	863.7	7:10	4:50	2384.3	608.2	2460.6	2772.2
10:35	1:25	906.1	1885.0	2091.5	916.5	7:05	4:55	2400.1	566.0	2466.0	2807.5
10:30	1:30	956.7	1868.6	2099.3	969.0	7:00	5:00	2414.8	523.5	2470.9	2842.3
10:25	1:35	1006.9	1851.3	2107.4	1021.3	6:55	5:05	2428.4	480.7	2475.5	2876.5
10:20	1:40	1056.5	1833.0	2115.7	1073.4	6:50	5:10	2440.7	437.8	2479.7	2910.1
10:15	1:45	1105.7	1814.0	2124.4	1125.2	6:45	5:15	2452.0	394.6	2483.5	2943.2
10:10	1:50	1154.4	1794.0	2133.3	1176.8	6:40	5:20	2462.0	351.2	2486.9	2975.7
10:05	1:55	1202.5	1773.2	2142.5	1228.0	6:35	5:25	2470.9	307.7	2490.0	3007.7
10:00	2:00	1250.0	1751.6	2151.9	1279.0	6:30	5:30	2478.6	264.0	2492.6	3039.1
9:55	2:05	1296.9	1729.1	2161.4	1329.7	6:25	5:35	2485.1	220.2	2494.9	3069.9
9:50	2:10	1343.2	1705.8	2171.2	1380.1	6:20	5:40	2490.5	176.3	2496.7	3100.2
9:45	2:15	1388.9	1681.7	2181.1	1430.1	6:15	5:45	2494.6	132.3	2498.2	3129.9
9:40	2:20	1433.9	1656.8	2191.1	1479.9	6:10	5:50	2497.6	88.2	2499.2	3159.1
9:35	2:25	1478.3	1631.1	2201.3	1529.2	6:05	5:55	2499.4	44.1	2499.8	3187.7
9:30	2:30	1521.9	1604.6	2211.5	1578.3	6:00	6:00	2500.0	0.0	2500.0	3215.7
9:25	2:35	1564.8	1577.3	2221.9	1626.9	5:55	6:05	2499.4	-44.1	2499.8	3243.2
9:20	2:40	1607.0	1549.4	2232.2	1675.2	5:50	6:10	2497.6	-88.2	2499.2	3270.1
9:15	2:45	1648.4	1520.6	2242.6	1723.1	5:45	6:15	2494.6	-132.3	2498.2	3296.4
9:10	2:50	1689.0	1491.2	2253.1	1770.6	5:40	6:20	2490.5	-176.3	2496.7	3322.2
9:05	2:55	1728.8	1461.0	2263.5	1817.7	5:35	6:25	2485.1	-220.2	2494.9	3347.5
9:00	3:00	1767.8	1430.2	2273.8	1864.4	5:30	6:30	2478.6	-264.0	2492.6	3372.2
8:55	3:05	1805.9	1398.6	2284.2	1910.7	5:25	6:35	2470.9	-307.7	2490.0	3396.4
8:50	3:10	1843.2	1366.4	2294.4	1956.5	5:20	6:40	2462.0	-351.2	2486.9	3420.0
8:45	3:15	1879.6	1333.6	2304.6	2001.9	5:15	6:45	2452.0	-394.6	2483.5	3443.1
8:40	3:20	1915.1	1300.1	2314.7	2046.9	5:10	6:50	2440.7	-437.8	2479.7	3465.6
8:35	3:25	1949.7	1266.0	2324.7	2091.4	5:05	6:55	2428.4	-480.7	2475.5	3487.6
8:30	3:30	1983.4	1231.2	2334.5	2135.4	5:00	7:00	2414.8	-523.5	2470.9	3509.1

Analemmatic Sundial

Latitude: 54.0° N/S

Earliest Sunrise: 3:26 a.m. Latest Sunset: 8:34 p.m.
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 2022.5 mm
 Sunrise/Sunset Markers: $X = \pm 744.8$ mm

Local Time		X	Y	Z	W
4:55	7:05	2400.1	-566.0	2466.0	3530.0
4:50	7:10	2384.3	-608.2	2460.6	3550.4
4:45	7:15	2367.3	-650.1	2455.0	3570.3
4:40	7:20	2349.2	-691.8	2449.0	3589.7
4:35	7:25	2330.0	-733.0	2442.6	3608.6
4:30	7:30	2309.7	-774.0	2435.9	3627.0
4:25	7:35	2288.3	-814.6	2428.9	3644.9
4:20	7:40	2265.8	-854.8	2421.6	3662.3
4:15	7:45	2242.2	-894.5	2414.0	3679.2
4:10	7:50	2217.5	-933.9	2406.2	3695.7
4:05	7:55	2191.8	-972.8	2398.0	3711.6
4:00	8:00	2165.1	-1011.3	2389.6	3727.1
3:55	8:05	2137.3	-1049.2	2380.9	3742.2
3:50	8:10	2108.5	-1086.7	2372.1	3756.7
3:45	8:15	2078.7	-1123.7	2362.9	3770.9
3:40	8:20	2047.9	-1160.1	2353.6	3784.6
3:35	8:25	2016.1	-1195.9	2344.1	3797.8
3:30	8:30	1983.4	-1231.2	2334.5	3810.6
3:25	8:35	1949.7	-1266.0	2324.7	3823.0
3:20	8:40	1915.1	-1300.1	2314.7	3835.0
3:15	8:45	1879.6	-1333.6	2304.6	3846.6

Analematic Sundial

Latitude: 54.0° N/S

Date Scale

Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 2022.5 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-623.4	-611.7	-608.1	-591.9	-587.1	-567.0	-561.4	-537.5	-531.1	-504.0	-496.8
February	-450.9	-418.0	-409.5	-374.6	-365.8	-329.3	-319.9	-282.2	-272.6	-233.8	-223.8
March	-194.2	-154.4	-144.3	-104.0	-94.0	-53.4	-43.4	-2.6	7.4	48.0	58.0
April	118.2	157.8	167.7	206.5	216.2	254.3	263.6	300.8	309.9	345.7	354.4
May	397.0	429.7	437.5	467.8	475.2	503.1	509.7	535.1	541.2	563.5	568.5
June	596.1	610.5	613.8	624.4	626.8	633.5	634.4	636.8	637.1	632.5	634.7
July	626.8	616.8	613.8	600.3	596.4	578.8	574.1	553.2	547.7	523.8	517.5
August	476.9	447.3	439.7	408.1	400.1	366.7	357.9	323.1	314.2	277.9	268.6
September	212.5	174.2	164.6	125.5	115.6	76.2	66.5	26.7	16.7	-23.3	-33.3
October	-83.2	-123.1	-133.0	-172.6	-182.3	-221.4	-231.2	-269.4	-279.0	-316.4	-325.5
November	-379.2	-413.6	-421.9	-454.3	-462.2	-492.2	-499.4	-526.7	-533.1	-557.3	-563.2
December	-588.3	-605.4	-609.0	-621.3	-624.1	-631.9	-633.5	-636.8	-637.1	-635.6	-634.7

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	623.4	611.7	608.1	591.9	587.1	567.0	561.4	537.5	531.1	504.0	496.8
February	450.9	418.0	409.5	374.6	365.8	329.3	319.9	282.2	272.6	233.8	223.8
March	194.2	154.4	144.3	104.0	94.0	53.4	43.4	2.6	-7.4	-48.0	-58.0
April	-118.2	-157.8	-167.7	-206.5	-216.2	-254.3	-263.6	-300.8	-309.9	-345.7	-354.4
May	-397.0	-429.7	-437.5	-467.8	-475.2	-503.1	-509.7	-535.1	-541.2	-563.5	-568.5
June	-596.1	-610.5	-613.8	-624.4	-626.8	-633.5	-634.4	-636.8	-637.1	-632.5	-634.7
July	-626.8	-616.8	-613.8	-600.3	-596.4	-578.8	-574.1	-553.2	-547.7	-523.8	-517.5
August	-476.9	-447.3	-439.7	-408.1	-400.1	-366.7	-357.9	-323.1	-314.2	-277.9	-268.6
September	-212.5	-174.2	-164.6	-125.5	-115.6	-76.2	-66.5	-26.7	-16.7	23.3	33.3
October	83.2	123.1	133.0	172.6	182.3	221.4	231.2	269.4	279.0	316.4	325.5
November	379.2	413.6	421.9	454.3	462.2	492.2	499.4	526.7	533.1	557.3	563.2
December	588.3	605.4	609.0	621.3	624.1	631.9	633.5	636.8	637.1	635.6	634.7

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
- 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