

Analemmatic Sundial

Latitude: 43.5° N/S

Earliest Sunrise: 4:17 a.m. Latest Sunset: 7:43 p.m.
 Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 688.4 mm
 Sunrise/Sunset Markers: X = ± 493.1 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	688.4	688.4	0.0						
11:55	12:05	21.8	688.2	688.5	21.8	8:25	3:35	806.4	407.0	903.3	854.1
11:50	12:10	43.6	687.7	689.1	43.6	8:20	3:40	819.2	394.8	909.3	870.2
11:45	12:15	65.4	686.9	690.0	65.4	8:15	3:45	831.5	382.4	915.2	886.0
11:40	12:20	87.2	685.7	691.3	87.2	8:10	3:50	843.4	369.9	920.9	901.5
11:35	12:25	108.9	684.3	692.9	108.9	8:05	3:55	854.9	357.1	926.5	916.8
11:30	12:30	130.5	682.5	694.8	130.7	8:00	4:00	866.0	344.2	931.9	931.9
11:25	12:35	152.1	680.3	697.1	152.3	7:55	4:05	876.7	331.1	937.2	946.7
11:20	12:40	173.6	677.9	699.8	174.0	7:50	4:10	887.0	317.8	942.2	961.3
11:15	12:45	195.1	675.1	702.8	195.5	7:45	4:15	896.9	304.5	947.1	975.6
11:10	12:50	216.4	672.0	706.0	217.1	7:40	4:20	906.3	290.9	951.9	989.6
11:05	12:55	237.7	668.6	709.6	238.5	7:35	4:25	915.3	277.2	956.4	1003.4
11:00	1:00	258.8	664.9	713.5	259.9	7:30	4:30	923.9	263.4	960.7	1016.9
10:55	1:05	279.8	660.9	717.7	281.2	7:25	4:35	932.0	249.5	964.8	1030.2
10:50	1:10	300.7	656.5	722.1	302.4	7:20	4:40	939.7	235.4	968.7	1043.1
10:45	1:15	321.4	651.8	726.8	323.5	7:15	4:45	946.9	221.3	972.4	1055.9
10:40	1:20	342.0	646.8	731.7	344.5	7:10	4:50	953.7	207.0	975.9	1068.3
10:35	1:25	362.4	641.6	736.9	365.4	7:05	4:55	960.0	192.6	979.2	1080.5
10:30	1:30	382.7	636.0	742.2	386.3	7:00	5:00	965.9	178.2	982.2	1092.4
10:25	1:35	402.7	630.1	747.8	406.9	6:55	5:05	971.3	163.6	985.0	1104.0
10:20	1:40	422.6	623.9	753.5	427.5	6:50	5:10	976.3	149.0	987.6	1115.4
10:15	1:45	442.3	617.4	759.4	447.9	6:45	5:15	980.8	134.3	989.9	1126.5
10:10	1:50	461.7	610.6	765.5	468.3	6:40	5:20	984.8	119.5	992.0	1137.3
10:05	1:55	481.0	603.5	771.7	488.4	6:35	5:25	988.4	104.7	993.9	1147.8
10:00	2:00	500.0	596.1	778.1	508.4	6:30	5:30	991.4	89.8	995.5	1158.1
9:55	2:05	518.8	588.5	784.5	528.3	6:25	5:35	994.1	74.9	996.9	1168.1
9:50	2:10	537.3	580.6	791.0	548.0	6:20	5:40	996.2	60.0	998.0	1177.8
9:45	2:15	555.6	572.3	797.6	567.6	6:15	5:45	997.9	45.0	998.9	1187.3
9:40	2:20	573.6	563.9	804.3	586.9	6:10	5:50	999.0	30.0	999.5	1196.5
9:35	2:25	591.3	555.1	811.1	606.1	6:05	5:55	999.8	15.0	999.9	1205.4
9:30	2:30	608.8	546.1	817.8	625.2	6:00	6:00	1000.0	0.0	1000.0	1214.0
9:25	2:35	625.9	536.8	824.6	644.0	5:55	6:05	999.8	-15.0	999.9	1222.4
9:20	2:40	642.8	527.3	831.4	662.7	5:50	6:10	999.0	-30.0	999.5	1230.5
9:15	2:45	659.3	517.5	838.2	681.1	5:45	6:15	997.9	-45.0	998.9	1238.4
9:10	2:50	675.6	507.5	845.0	699.4	5:40	6:20	996.2	-60.0	998.0	1246.0
9:05	2:55	691.5	497.2	851.7	717.4	5:35	6:25	994.1	-74.9	996.9	1253.3
9:00	3:00	707.1	486.7	858.4	735.3	5:30	6:30	991.4	-89.8	995.5	1260.4
8:55	3:05	722.4	476.0	865.1	752.9	5:25	6:35	988.4	-104.7	993.9	1267.2
8:50	3:10	737.3	465.0	871.7	770.4	5:20	6:40	984.8	-119.5	992.0	1273.8
8:45	3:15	751.8	453.9	878.2	787.6	5:15	6:45	980.8	-134.3	989.9	1280.1
8:40	3:20	766.0	442.5	884.6	804.5	5:10	6:50	976.3	-149.0	987.6	1286.2
8:35	3:25	779.9	430.9	891.0	821.3	5:05	6:55	971.3	-163.6	985.0	1292.0
8:30	3:30	793.4	419.0	897.2	837.8	5:00	7:00	965.9	-178.2	982.2	1297.6

Analemmatic Sundial**Latitude: 43.5° N/S**

Earliest Sunrise: 4:17 a.m. Latest Sunset: 7:43 p.m.
 Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 688.4 mm
 Sunrise/Sunset Markers: X = ± 493.1 mm

Local Time		X	Y	Z	W
4:55	7:05	960.0	-192.6	979.2	1303.0
4:50	7:10	953.7	-207.0	975.9	1308.1
4:45	7:15	946.9	-221.3	972.4	1313.0
4:40	7:20	939.7	-235.4	968.7	1317.7
4:35	7:25	932.0	-249.5	964.8	1322.2
4:30	7:30	923.9	-263.4	960.7	1326.4
4:25	7:35	915.3	-277.2	956.4	1330.5
4:20	7:40	906.3	-290.9	951.9	1334.3
4:15	7:45	896.9	-304.5	947.1	1337.9

Analemmatic Sundial

Latitude: 43.5° N/S

Date Scale

Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 688.4 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-307.8	-301.9	-300.2	-292.2	-289.8	-279.9	-277.1	-265.3	-262.2	-248.8	-245.2
February	-222.6	-206.4	-202.1	-184.9	-180.6	-162.5	-157.9	-139.3	-134.6	-115.4	-110.5
March	-95.9	-76.2	-71.3	-51.4	-46.4	-26.3	-21.4	-1.3	3.7	23.7	28.6
April	58.4	77.9	82.8	101.9	106.7	125.6	130.1	148.5	153.0	170.7	175.0
May	196.0	212.1	216.0	230.9	234.6	248.4	251.6	264.2	267.2	278.2	280.6
June	294.2	301.4	303.0	308.2	309.4	312.7	313.1	314.3	314.5	312.2	313.3
July	309.4	304.5	303.0	296.3	294.4	285.7	283.4	273.1	270.3	258.6	255.4
August	235.4	220.8	217.1	201.4	197.5	181.0	176.7	159.5	155.1	137.2	132.6
September	104.9	86.0	81.2	61.9	57.1	37.6	32.8	13.2	8.2	-11.5	-16.5
October	-41.1	-60.8	-65.6	-85.2	-90.0	-109.3	-114.1	-133.0	-137.7	-156.2	-160.7
November	-187.2	-204.2	-208.3	-224.3	-228.2	-243.0	-246.5	-260.0	-263.2	-275.1	-278.0
December	-290.4	-298.8	-300.6	-306.7	-308.1	-311.9	-312.7	-314.3	-314.5	-313.7	-313.3

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	307.8	301.9	300.2	292.2	289.8	279.9	277.1	265.3	262.2	248.8	245.2
February	222.6	206.4	202.1	184.9	180.6	162.5	157.9	139.3	134.6	115.4	110.5
March	95.9	76.2	71.3	51.4	46.4	26.3	21.4	1.3	-3.7	-23.7	-28.6
April	-58.4	-77.9	-82.8	-101.9	-106.7	-125.6	-130.1	-148.5	-153.0	-170.7	-175.0
May	-196.0	-212.1	-216.0	-230.9	-234.6	-248.4	-251.6	-264.2	-267.2	-278.2	-280.6
June	-294.2	-301.4	-303.0	-308.2	-309.4	-312.7	-313.1	-314.3	-314.5	-312.2	-313.3
July	-309.4	-304.5	-303.0	-296.3	-294.4	-285.7	-283.4	-273.1	-270.3	-258.6	-255.4
August	-235.4	-220.8	-217.1	-201.4	-197.5	-181.0	-176.7	-159.5	-155.1	-137.2	-132.6
September	-104.9	-86.0	-81.2	-61.9	-57.1	-37.6	-32.8	-13.2	-8.2	11.5	16.5
October	41.1	60.8	65.6	85.2	90.0	109.3	114.1	133.0	137.7	156.2	160.7
November	187.2	204.2	208.3	224.3	228.2	243.0	246.5	260.0	263.2	275.1	278.0
December	290.4	298.8	300.6	306.7	308.1	311.9	312.7	314.3	314.5	313.7	313.3

Southern Hemisphere

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

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

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

Analemmatic Sundial

Latitude: 43.5° N/S

Earliest Sunrise: 4:17 a.m. Latest Sunset: 7:43 p.m.
 Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 1032.5 mm
 Sunrise/Sunset Markers: X = ± 739.6 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1032.5	1032.5	0.0						
11:55	12:05	32.7	1032.3	1032.8	32.7	8:25	3:35	1209.7	610.5	1355.0	1281.2
11:50	12:10	65.4	1031.5	1033.6	65.4	8:20	3:40	1228.7	592.2	1364.0	1305.2
11:45	12:15	98.1	1030.3	1035.0	98.1	8:15	3:45	1247.2	573.6	1372.8	1328.9
11:40	12:20	130.7	1028.6	1036.9	130.8	8:10	3:50	1265.1	554.8	1381.4	1352.3
11:35	12:25	163.3	1026.4	1039.3	163.4	8:05	3:55	1282.4	535.6	1389.7	1375.3
11:30	12:30	195.8	1023.7	1042.3	196.0	8:00	4:00	1299.0	516.3	1397.9	1397.9
11:25	12:35	228.2	1020.5	1045.7	228.5	7:55	4:05	1315.1	496.6	1405.7	1420.1
11:20	12:40	260.5	1016.8	1049.7	260.9	7:50	4:10	1330.5	476.8	1413.4	1441.9
11:15	12:45	292.6	1012.7	1054.1	293.3	7:45	4:15	1345.3	456.7	1420.7	1463.4
11:10	12:50	324.7	1008.1	1059.0	325.6	7:40	4:20	1359.5	436.4	1427.8	1484.4
11:05	12:55	356.5	1002.9	1064.4	357.8	7:35	4:25	1373.0	415.8	1434.6	1505.1
11:00	1:00	388.2	997.3	1070.2	389.8	7:30	4:30	1385.8	395.1	1441.0	1525.4
10:55	1:05	419.7	991.3	1076.5	421.8	7:25	4:35	1398.0	374.2	1447.2	1545.3
10:50	1:10	451.1	984.7	1083.1	453.6	7:20	4:40	1409.5	353.1	1453.1	1564.7
10:45	1:15	482.2	977.7	1090.2	485.3	7:15	4:45	1420.4	331.9	1458.7	1583.8
10:40	1:20	513.0	970.3	1097.5	516.8	7:10	4:50	1430.6	310.5	1463.9	1602.5
10:35	1:25	543.7	962.3	1105.3	548.2	7:05	4:55	1440.1	288.9	1468.8	1620.7
10:30	1:30	574.0	953.9	1113.3	579.4	7:00	5:00	1448.9	267.2	1473.3	1638.6
10:25	1:35	604.1	945.1	1121.7	610.4	6:55	5:05	1457.0	245.4	1477.5	1656.0
10:20	1:40	633.9	935.8	1130.3	641.3	6:50	5:10	1464.4	223.5	1481.4	1673.1
10:15	1:45	663.4	926.0	1139.2	671.9	6:45	5:15	1471.2	201.4	1484.9	1689.7
10:10	1:50	692.6	915.9	1148.3	702.4	6:40	5:20	1477.2	179.3	1488.1	1705.9
10:05	1:55	721.5	905.2	1157.6	732.6	6:35	5:25	1482.5	157.1	1490.8	1721.7
10:00	2:00	750.0	894.2	1167.1	762.7	6:30	5:30	1487.2	134.8	1493.3	1737.1
9:55	2:05	778.2	882.7	1176.7	792.4	6:25	5:35	1491.1	112.4	1495.3	1752.1
9:50	2:10	805.9	870.8	1186.5	822.0	6:20	5:40	1494.3	90.0	1497.0	1766.7
9:45	2:15	833.4	858.5	1196.5	851.3	6:15	5:45	1496.8	67.5	1498.3	1780.9
9:40	2:20	860.4	845.8	1206.5	880.4	6:10	5:50	1498.6	45.0	1499.2	1794.7
9:35	2:25	887.0	832.7	1216.6	909.2	6:05	5:55	1499.6	22.5	1499.8	1808.0
9:30	2:30	913.1	819.2	1226.7	937.7	6:00	6:00	1500.0	0.0	1500.0	1821.0
9:25	2:35	938.9	805.3	1236.9	966.0	5:55	6:05	1499.6	-22.5	1499.8	1833.6
9:20	2:40	964.2	791.0	1247.1	994.0	5:50	6:10	1498.6	-45.0	1499.2	1845.8
9:15	2:45	989.0	776.3	1257.3	1021.7	5:45	6:15	1496.8	-67.5	1498.3	1857.6
9:10	2:50	1013.4	761.3	1267.5	1049.1	5:40	6:20	1494.3	-90.0	1497.0	1868.9
9:05	2:55	1037.3	745.9	1277.6	1076.2	5:35	6:25	1491.1	-112.4	1495.3	1880.0
9:00	3:00	1060.7	730.1	1287.7	1102.9	5:30	6:30	1487.2	-134.8	1493.3	1890.6
8:55	3:05	1083.5	714.0	1297.6	1129.4	5:25	6:35	1482.5	-157.1	1490.8	1900.8
8:50	3:10	1105.9	697.6	1307.5	1155.5	5:20	6:40	1477.2	-179.3	1488.1	1910.7
8:45	3:15	1127.8	680.8	1317.3	1181.3	5:15	6:45	1471.2	-201.4	1484.9	1920.2
8:40	3:20	1149.1	663.7	1327.0	1206.8	5:10	6:50	1464.4	-223.5	1481.4	1929.3
8:35	3:25	1169.8	646.3	1336.5	1231.9	5:05	6:55	1457.0	-245.4	1477.5	1938.1
8:30	3:30	1190.0	628.6	1345.8	1256.7	5:00	7:00	1448.9	-267.2	1473.3	1946.5

Analemmatic Sundial**Latitude: 43.5° N/S**

Earliest Sunrise: 4:17 a.m. Latest Sunset: 7:43 p.m.

Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 1032.5 mm

Sunrise/Sunset Markers: $X = \pm 739.6$ mm

Local Time		X	Y	Z	W
4:55	7:05	1440.1	-288.9	1468.8	1954.5
4:50	7:10	1430.6	-310.5	1463.9	1962.2
4:45	7:15	1420.4	-331.9	1458.7	1969.6
4:40	7:20	1409.5	-353.1	1453.1	1976.6
4:35	7:25	1398.0	-374.2	1447.2	1983.3
4:30	7:30	1385.8	-395.1	1441.0	1989.7
4:25	7:35	1373.0	-415.8	1434.6	1995.7
4:20	7:40	1359.5	-436.4	1427.8	2001.4
4:15	7:45	1345.3	-456.7	1420.7	2006.9

Analemmatic Sundial

Latitude: 43.5° N/S

Date Scale

Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 1032.5 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-461.6	-452.9	-450.2	-438.3	-434.8	-419.8	-415.7	-398.0	-393.2	-373.2	-367.9
February	-333.9	-309.5	-303.2	-277.3	-270.9	-243.8	-236.8	-208.9	-201.9	-173.1	-165.7
March	-143.8	-114.4	-106.9	-77.0	-69.6	-39.5	-32.1	-1.9	5.5	35.5	42.9
April	87.5	116.9	124.2	152.9	160.1	188.3	195.2	222.8	229.5	256.0	262.4
May	294.0	318.2	324.0	346.4	351.9	372.5	377.4	396.2	400.8	417.2	420.9
June	441.4	452.0	454.5	462.3	464.1	469.0	469.7	471.5	471.7	468.4	469.9
July	464.1	456.7	454.5	444.5	441.6	428.6	425.1	409.6	405.5	387.9	383.2
August	353.1	331.2	325.6	302.2	296.2	271.5	265.0	239.2	232.7	205.8	198.9
September	157.4	129.0	121.9	92.9	85.6	56.5	49.2	19.8	12.3	-17.3	-24.7
October	-61.6	-91.2	-98.4	-127.8	-134.9	-164.0	-171.2	-199.5	-206.6	-234.3	-241.0
November	-280.8	-306.3	-312.4	-336.4	-342.2	-364.5	-369.8	-390.0	-394.7	-412.7	-417.0
December	-435.6	-448.2	-450.9	-460.1	-462.1	-467.9	-469.0	-471.5	-471.7	-470.6	-469.9

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	461.6	452.9	450.2	438.3	434.8	419.8	415.7	398.0	393.2	373.2	367.9
February	333.9	309.5	303.2	277.3	270.9	243.8	236.8	208.9	201.9	173.1	165.7
March	143.8	114.4	106.9	77.0	69.6	39.5	32.1	1.9	-5.5	-35.5	-42.9
April	-87.5	-116.9	-124.2	-152.9	-160.1	-188.3	-195.2	-222.8	-229.5	-256.0	-262.4
May	-294.0	-318.2	-324.0	-346.4	-351.9	-372.5	-377.4	-396.2	-400.8	-417.2	-420.9
June	-441.4	-452.0	-454.5	-462.3	-464.1	-469.0	-469.7	-471.5	-471.7	-468.4	-469.9
July	-464.1	-456.7	-454.5	-444.5	-441.6	-428.6	-425.1	-409.6	-405.5	-387.9	-383.2
August	-353.1	-331.2	-325.6	-302.2	-296.2	-271.5	-265.0	-239.2	-232.7	-205.8	-198.9
September	-157.4	-129.0	-121.9	-92.9	-85.6	-56.5	-49.2	-19.8	-12.3	17.3	24.7
October	61.6	91.2	98.4	127.8	134.9	164.0	171.2	199.5	206.6	234.3	241.0
November	280.8	306.3	312.4	336.4	342.2	364.5	369.8	390.0	394.7	412.7	417.0
December	435.6	448.2	450.9	460.1	462.1	467.9	469.0	471.5	471.7	470.6	469.9

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: 43.5° N/S

Earliest Sunrise: 4:17 a.m. Latest Sunset: 7:43 p.m.
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1376.7 mm
 Sunrise/Sunset Markers: X = ± 986.1 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1376.7	1376.7	0.0						
11:55	12:05	43.6	1376.4	1377.1	43.6	8:25	3:35	1612.9	814.1	1806.7	1708.2
11:50	12:10	87.2	1375.4	1378.2	87.2	8:20	3:40	1638.3	789.6	1818.7	1740.3
11:45	12:15	130.8	1373.8	1380.0	130.8	8:15	3:45	1662.9	764.9	1830.4	1771.9
11:40	12:20	174.3	1371.5	1382.5	174.4	8:10	3:50	1686.8	739.7	1841.8	1803.1
11:35	12:25	217.7	1368.5	1385.7	217.9	8:05	3:55	1709.8	714.2	1853.0	1833.7
11:30	12:30	261.1	1364.9	1389.7	261.3	8:00	4:00	1732.1	688.4	1863.8	1863.8
11:25	12:35	304.2	1360.7	1394.3	304.7	7:55	4:05	1753.5	662.2	1874.3	1893.4
11:20	12:40	347.3	1355.8	1399.6	347.9	7:50	4:10	1774.0	635.7	1884.5	1922.6
11:15	12:45	390.2	1350.3	1405.5	391.1	7:45	4:15	1793.7	608.9	1894.3	1951.2
11:10	12:50	432.9	1344.1	1412.1	434.1	7:40	4:20	1812.6	581.8	1903.7	1979.2
11:05	12:55	475.4	1337.3	1419.2	477.0	7:35	4:25	1830.6	554.5	1912.7	2006.8
11:00	1:00	517.6	1329.8	1427.0	519.8	7:30	4:30	1847.8	526.8	1921.4	2033.8
10:55	1:05	559.7	1321.7	1435.3	562.4	7:25	4:35	1864.0	499.0	1929.6	2060.3
10:50	1:10	601.4	1313.0	1444.2	604.8	7:20	4:40	1879.4	470.9	1937.5	2086.3
10:45	1:15	642.9	1303.6	1453.5	647.0	7:15	4:45	1893.9	442.5	1944.9	2111.7
10:40	1:20	684.0	1293.7	1463.4	689.1	7:10	4:50	1907.4	414.0	1951.8	2136.6
10:35	1:25	724.9	1283.1	1473.7	730.9	7:05	4:55	1920.1	385.2	1958.4	2161.0
10:30	1:30	765.4	1271.9	1484.4	772.5	7:00	5:00	1931.9	356.3	1964.4	2184.8
10:25	1:35	805.5	1260.1	1495.6	813.9	6:55	5:05	1942.7	327.2	1970.1	2208.0
10:20	1:40	845.2	1247.7	1507.1	855.0	6:50	5:10	1952.6	298.0	1975.2	2230.8
10:15	1:45	884.6	1234.7	1518.9	895.9	6:45	5:15	1961.6	268.6	1979.9	2252.9
10:10	1:50	923.5	1221.2	1531.0	936.5	6:40	5:20	1969.6	239.1	1984.1	2274.6
10:05	1:55	962.0	1207.0	1543.5	976.8	6:35	5:25	1976.7	209.4	1987.8	2295.6
10:00	2:00	1000.0	1192.3	1556.1	1016.9	6:30	5:30	1982.9	179.7	1991.0	2316.2
9:55	2:05	1037.5	1177.0	1569.0	1056.6	6:25	5:35	1988.1	149.9	1993.8	2336.2
9:50	2:10	1074.6	1161.1	1582.1	1096.0	6:20	5:40	1992.4	120.0	1996.0	2355.6
9:45	2:15	1111.1	1144.7	1595.3	1135.1	6:15	5:45	1995.7	90.0	1997.7	2374.5
9:40	2:20	1147.2	1127.7	1608.6	1173.9	6:10	5:50	1998.1	60.1	1999.0	2392.9
9:35	2:25	1182.6	1110.2	1622.1	1212.3	6:05	5:55	1999.5	30.0	1999.7	2410.7
9:30	2:30	1217.5	1092.2	1635.6	1250.3	6:00	6:00	2000.0	0.0	2000.0	2428.0
9:25	2:35	1251.8	1073.7	1649.2	1288.0	5:55	6:05	1999.5	-30.0	1999.7	2444.8
9:20	2:40	1285.6	1054.6	1662.8	1325.3	5:50	6:10	1998.1	-60.1	1999.0	2461.0
9:15	2:45	1318.7	1035.1	1676.4	1362.2	5:45	6:15	1995.7	-90.0	1997.7	2476.7
9:10	2:50	1351.2	1015.0	1690.0	1398.8	5:40	6:20	1992.4	-120.0	1996.0	2491.9
9:05	2:55	1383.0	994.5	1703.5	1434.9	5:35	6:25	1988.1	-149.9	1993.8	2506.6
9:00	3:00	1414.2	973.5	1716.9	1470.6	5:30	6:30	1982.9	-179.7	1991.0	2520.8
8:55	3:05	1444.7	952.0	1730.2	1505.9	5:25	6:35	1976.7	-209.4	1987.8	2534.4
8:50	3:10	1474.6	930.1	1743.4	1540.7	5:20	6:40	1969.6	-239.1	1984.1	2547.6
8:45	3:15	1503.7	907.7	1756.4	1575.1	5:15	6:45	1961.6	-268.6	1979.9	2560.2
8:40	3:20	1532.1	884.9	1769.3	1609.1	5:10	6:50	1952.6	-298.0	1975.2	2572.4
8:35	3:25	1559.8	861.7	1782.0	1642.6	5:05	6:55	1942.7	-327.2	1970.1	2584.1
8:30	3:30	1586.7	838.1	1794.4	1675.6	5:00	7:00	1931.9	-356.3	1964.4	2595.3

Analemmatic Sundial**Latitude: 43.5° N/S**

Earliest Sunrise: 4:17 a.m. Latest Sunset: 7:43 p.m.
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1376.7 mm
 Sunrise/Sunset Markers: X = ± 986.1 mm

Local Time		X	Y	Z	W
4:55	7:05	1920.1	-385.2	1958.4	2606.0
4:50	7:10	1907.4	-414.0	1951.8	2616.3
4:45	7:15	1893.9	-442.5	1944.9	2626.1
4:40	7:20	1879.4	-470.9	1937.5	2635.5
4:35	7:25	1864.0	-499.0	1929.6	2644.4
4:30	7:30	1847.8	-526.8	1921.4	2652.9
4:25	7:35	1830.6	-554.5	1912.7	2660.9
4:20	7:40	1812.6	-581.8	1903.7	2668.6
4:15	7:45	1793.7	-608.9	1894.3	2675.9

Analematic Sundial

Latitude: 43.5° N/S

Date Scale

Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1376.7 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-615.5	-603.9	-600.3	-584.4	-579.7	-559.8	-554.3	-530.6	-524.3	-497.6	-490.5
February	-445.2	-412.7	-404.2	-369.8	-361.2	-325.1	-315.8	-278.6	-269.1	-230.8	-221.0
March	-191.8	-152.5	-142.5	-102.7	-92.8	-52.7	-42.8	-2.5	7.3	47.4	57.3
April	116.7	155.8	165.5	203.9	213.5	251.1	260.2	297.0	306.0	341.3	349.9
May	392.0	424.2	431.9	461.9	469.1	496.7	503.2	528.3	534.3	556.3	561.3
June	588.5	602.7	606.0	616.4	618.8	625.4	626.3	628.7	629.0	624.5	626.6
July	618.8	608.9	606.0	592.6	588.8	571.5	566.8	546.2	540.7	517.2	510.9
August	470.8	441.6	434.1	402.9	395.0	362.0	353.4	319.0	310.2	274.4	265.2
September	209.8	172.0	162.5	123.9	114.2	75.3	65.6	26.3	16.5	-23.0	-32.9
October	-82.1	-121.6	-131.3	-170.4	-179.9	-218.6	-228.2	-266.0	-275.4	-312.3	-321.4
November	-374.4	-408.3	-416.5	-448.5	-456.3	-486.0	-493.0	-520.0	-526.3	-550.2	-556.0
December	-580.8	-597.7	-601.2	-613.4	-616.1	-623.9	-625.4	-628.7	-629.0	-627.5	-626.6

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	615.5	603.9	600.3	584.4	579.7	559.8	554.3	530.6	524.3	497.6	490.5
February	445.2	412.7	404.2	369.8	361.2	325.1	315.8	278.6	269.1	230.8	221.0
March	191.8	152.5	142.5	102.7	92.8	52.7	42.8	2.5	-7.3	-47.4	-57.3
April	-116.7	-155.8	-165.5	-203.9	-213.5	-251.1	-260.2	-297.0	-306.0	-341.3	-349.9
May	-392.0	-424.2	-431.9	-461.9	-469.1	-496.7	-503.2	-528.3	-534.3	-556.3	-561.3
June	-588.5	-602.7	-606.0	-616.4	-618.8	-625.4	-626.3	-628.7	-629.0	-624.5	-626.6
July	-618.8	-608.9	-606.0	-592.6	-588.8	-571.5	-566.8	-546.2	-540.7	-517.2	-510.9
August	-470.8	-441.6	-434.1	-402.9	-395.0	-362.0	-353.4	-319.0	-310.2	-274.4	-265.2
September	-209.8	-172.0	-162.5	-123.9	-114.2	-75.3	-65.6	-26.3	-16.5	23.0	32.9
October	82.1	121.6	131.3	170.4	179.9	218.6	228.2	266.0	275.4	312.3	321.4
November	374.4	408.3	416.5	448.5	456.3	486.0	493.0	520.0	526.3	550.2	556.0
December	580.8	597.7	601.2	613.4	616.1	623.9	625.4	628.7	629.0	627.5	626.6

Southern Hemisphere

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

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

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

Analemmatic Sundial

Latitude: 43.5° N/S

Earliest Sunrise: 4:17 a.m. Latest Sunset: 7:43 p.m.
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 1720.9 mm
 Sunrise/Sunset Markers: X = ± 1232.6 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1720.9	1720.9	0.0						
11:55	12:05	54.5	1720.5	1721.3	54.5	8:25	3:35	2016.1	1017.6	2258.4	2135.3
11:50	12:10	109.0	1719.2	1722.7	109.1	8:20	3:40	2047.9	987.1	2273.3	2175.4
11:45	12:15	163.5	1717.2	1725.0	163.5	8:15	3:45	2078.7	956.1	2288.0	2214.9
11:40	12:20	217.9	1714.3	1728.1	218.0	8:10	3:50	2108.5	924.6	2302.3	2253.8
11:35	12:25	272.2	1710.7	1732.2	272.4	8:05	3:55	2137.3	892.7	2316.2	2292.1
11:30	12:30	326.3	1706.2	1737.1	326.6	8:00	4:00	2165.1	860.4	2329.8	2329.8
11:25	12:35	380.3	1700.9	1742.9	380.8	7:55	4:05	2191.8	827.7	2342.9	2366.8
11:20	12:40	434.1	1694.7	1749.5	434.9	7:50	4:10	2217.5	794.6	2355.6	2403.2
11:15	12:45	487.7	1687.8	1756.9	488.8	7:45	4:15	2242.2	761.1	2367.8	2439.0
11:10	12:50	541.1	1680.1	1765.1	542.6	7:40	4:20	2265.8	727.3	2379.6	2474.1
11:05	12:55	594.2	1671.6	1774.0	596.3	7:35	4:25	2288.3	693.1	2390.9	2508.5
11:00	1:00	647.0	1662.2	1783.7	649.7	7:30	4:30	2309.7	658.6	2401.7	2542.3
10:55	1:05	699.6	1652.1	1794.1	702.9	7:25	4:35	2330.0	623.7	2412.1	2575.4
10:50	1:10	751.8	1641.2	1805.2	756.0	7:20	4:40	2349.2	588.6	2421.8	2607.9
10:45	1:15	803.6	1629.6	1816.9	808.8	7:15	4:45	2367.3	553.2	2431.1	2639.7
10:40	1:20	855.1	1617.1	1829.2	861.3	7:10	4:50	2384.3	517.5	2439.8	2670.8
10:35	1:25	906.1	1603.9	1842.1	913.6	7:05	4:55	2400.1	481.6	2448.0	2701.2
10:30	1:30	956.7	1589.9	1855.5	965.6	7:00	5:00	2414.8	445.4	2455.5	2731.0
10:25	1:35	1006.9	1575.1	1869.5	1017.4	6:55	5:05	2428.4	409.0	2462.6	2760.0
10:20	1:40	1056.5	1559.7	1883.8	1068.8	6:50	5:10	2440.7	372.5	2469.0	2788.4
10:15	1:45	1105.7	1543.4	1898.6	1119.9	6:45	5:15	2452.0	335.7	2474.8	2816.2
10:10	1:50	1154.4	1526.4	1913.8	1170.6	6:40	5:20	2462.0	298.8	2480.1	2843.2
10:05	1:55	1202.5	1508.7	1929.3	1221.0	6:35	5:25	2470.9	261.8	2484.7	2869.6
10:00	2:00	1250.0	1490.3	1945.1	1271.1	6:30	5:30	2478.6	224.6	2488.8	2895.2
9:55	2:05	1296.9	1471.2	1961.2	1320.7	6:25	5:35	2485.1	187.3	2492.2	2920.2
9:50	2:10	1343.2	1451.4	1977.6	1370.0	6:20	5:40	2490.5	150.0	2495.0	2944.5
9:45	2:15	1388.9	1430.9	1994.1	1418.9	6:15	5:45	2494.6	112.6	2497.2	2968.2
9:40	2:20	1433.9	1409.7	2010.8	1467.3	6:10	5:50	2497.6	75.1	2498.7	2991.1
9:35	2:25	1478.3	1387.8	2027.6	1515.3	6:05	5:55	2499.4	37.5	2499.7	3013.4
9:30	2:30	1521.9	1365.3	2044.5	1562.9	6:00	6:00	2500.0	0.0	2500.0	3035.0
9:25	2:35	1564.8	1342.1	2061.5	1610.0	5:55	6:05	2499.4	-37.5	2499.7	3056.0
9:20	2:40	1607.0	1318.3	2078.5	1656.6	5:50	6:10	2497.6	-75.1	2498.7	3076.3
9:15	2:45	1648.4	1293.8	2095.5	1702.8	5:45	6:15	2494.6	-112.6	2497.2	3095.9
9:10	2:50	1689.0	1268.8	2112.4	1748.4	5:40	6:20	2490.5	-150.0	2495.0	3114.9
9:05	2:55	1728.8	1243.1	2129.3	1793.6	5:35	6:25	2485.1	-187.3	2492.2	3133.3
9:00	3:00	1767.8	1216.9	2146.1	1838.2	5:30	6:30	2478.6	-224.6	2488.8	3151.0
8:55	3:05	1805.9	1190.0	2162.7	1882.3	5:25	6:35	2470.9	-261.8	2484.7	3168.0
8:50	3:10	1843.2	1162.6	2179.2	1925.9	5:20	6:40	2462.0	-298.8	2480.1	3184.5
8:45	3:15	1879.6	1134.7	2195.5	1968.9	5:15	6:45	2452.0	-335.7	2474.8	3200.3
8:40	3:20	1915.1	1106.2	2211.6	2011.4	5:10	6:50	2440.7	-372.5	2469.0	3215.5
8:35	3:25	1949.7	1077.1	2227.5	2053.2	5:05	6:55	2428.4	-409.0	2462.6	3230.1
8:30	3:30	1983.4	1047.6	2243.1	2094.5	5:00	7:00	2414.8	-445.4	2455.5	3244.1

Analemmatic Sundial**Latitude: 43.5° N/S**

Earliest Sunrise: 4:17 a.m. Latest Sunset: 7:43 p.m.
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 1720.9 mm
 Sunrise/Sunset Markers: $X = \pm 1232.6$ mm

Local Time		X	Y	Z	W
4:55	7:05	2400.1	-481.6	2448.0	3257.5
4:50	7:10	2384.3	-517.5	2439.8	3270.3
4:45	7:15	2367.3	-553.2	2431.1	3282.6
4:40	7:20	2349.2	-588.6	2421.8	3294.3
4:35	7:25	2330.0	-623.7	2412.1	3305.5
4:30	7:30	2309.7	-658.6	2401.7	3316.1
4:25	7:35	2288.3	-693.1	2390.9	3326.2
4:20	7:40	2265.8	-727.3	2379.6	3335.7
4:15	7:45	2242.2	-761.1	2367.8	3344.8

Analemmatic Sundial

Latitude: 43.5° N/S

Date Scale

Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 1720.9 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-769.4	-754.9	-750.4	-730.5	-724.6	-699.7	-692.8	-663.3	-655.4	-621.9	-613.1
February	-556.5	-515.9	-505.3	-462.2	-451.5	-406.3	-394.7	-348.2	-336.4	-288.5	-276.2
March	-239.7	-190.6	-178.1	-128.4	-116.0	-65.9	-53.5	-3.2	9.2	59.2	71.6
April	145.9	194.8	206.9	254.9	266.8	313.9	325.3	371.3	382.5	426.7	437.4
May	490.0	530.3	539.9	577.3	586.4	620.9	629.0	660.4	667.9	695.4	701.6
June	735.6	753.4	757.5	770.5	773.5	781.7	782.9	785.9	786.2	780.6	783.2
July	773.5	761.2	757.5	740.8	736.0	714.3	708.5	682.7	675.9	646.4	638.6
August	588.5	552.0	542.7	503.6	493.7	452.5	441.7	398.7	387.8	343.0	331.5
September	262.3	215.0	203.1	154.8	142.7	94.1	82.0	32.9	20.6	-28.8	-41.2
October	-102.7	-152.0	-164.1	-213.0	-224.9	-273.3	-285.3	-332.5	-344.3	-390.4	-401.7
November	-468.0	-510.4	-520.7	-560.7	-570.4	-607.5	-616.3	-650.0	-657.9	-687.8	-695.0
December	-726.1	-747.1	-751.5	-766.8	-770.1	-779.9	-781.7	-785.9	-786.2	-784.4	-783.2

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	769.4	754.9	750.4	730.5	724.6	699.7	692.8	663.3	655.4	621.9	613.1
February	556.5	515.9	505.3	462.2	451.5	406.3	394.7	348.2	336.4	288.5	276.2
March	239.7	190.6	178.1	128.4	116.0	65.9	53.5	3.2	-9.2	-59.2	-71.6
April	-145.9	-194.8	-206.9	-254.9	-266.8	-313.9	-325.3	-371.3	-382.5	-426.7	-437.4
May	-490.0	-530.3	-539.9	-577.3	-586.4	-620.9	-629.0	-660.4	-667.9	-695.4	-701.6
June	-735.6	-753.4	-757.5	-770.5	-773.5	-781.7	-782.9	-785.9	-786.2	-780.6	-783.2
July	-773.5	-761.2	-757.5	-740.8	-736.0	-714.3	-708.5	-682.7	-675.9	-646.4	-638.6
August	-588.5	-552.0	-542.7	-503.6	-493.7	-452.5	-441.7	-398.7	-387.8	-343.0	-331.5
September	-262.3	-215.0	-203.1	-154.8	-142.7	-94.1	-82.0	-32.9	-20.6	28.8	41.2
October	102.7	152.0	164.1	213.0	224.9	273.3	285.3	332.5	344.3	390.4	401.7
November	468.0	510.4	520.7	560.7	570.4	607.5	616.3	650.0	657.9	687.8	695.0
December	726.1	747.1	751.5	766.8	770.1	779.9	781.7	785.9	786.2	784.4	783.2

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 |