

Analemmatic Sundial

Latitude: 33.5° N/S

Earliest Sunrise: 4:48 a.m. Latest Sunset: 7:12 p.m.
 Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 551.9 mm
 Sunrise/Sunset Markers: X = ± 674.4 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	551.9	551.9	0.0							
11:55	12:05	21.8	551.8	552.2	21.8	8:10	3:50	843.4	296.6	894.0	881.2
11:50	12:10	43.6	551.4	553.1	43.6	8:05	3:55	854.9	286.3	901.6	895.2
11:45	12:15	65.4	550.8	554.6	65.4	8:00	4:00	866.0	276.0	908.9	908.9
11:40	12:20	87.2	549.8	556.7	87.2	7:55	4:05	876.7	265.5	916.0	922.3
11:35	12:25	108.9	548.7	559.4	108.9	7:50	4:10	887.0	254.9	922.9	935.4
11:30	12:30	130.5	547.2	562.6	130.6	7:45	4:15	896.9	244.1	929.5	948.2
11:25	12:35	152.1	545.5	566.3	152.3	7:40	4:20	906.3	233.3	935.8	960.7
11:20	12:40	173.6	543.6	570.6	173.9	7:35	4:25	915.3	222.3	941.9	972.9
11:15	12:45	195.1	541.3	575.4	195.4	7:30	4:30	923.9	211.2	947.7	984.7
11:10	12:50	216.4	538.9	580.7	216.8	7:25	4:35	932.0	200.0	953.2	996.2
11:05	12:55	237.7	536.1	586.4	238.2	7:20	4:40	939.7	188.8	958.5	1007.4
11:00	1:00	258.8	533.1	592.6	259.5	7:15	4:45	946.9	177.4	963.4	1018.3
10:55	1:05	279.8	529.9	599.2	280.7	7:10	4:50	953.7	166.0	968.1	1028.9
10:50	1:10	300.7	526.4	606.2	301.8	7:05	4:55	960.0	154.4	972.4	1039.1
10:45	1:15	321.4	522.6	613.6	322.8	7:00	5:00	965.9	142.9	976.4	1049.0
10:40	1:20	342.0	518.7	621.3	343.6	6:55	5:05	971.3	131.2	980.2	1058.6
10:35	1:25	362.4	514.4	629.3	364.4	6:50	5:10	976.3	119.5	983.6	1067.8
10:30	1:30	382.7	509.9	637.5	385.0	6:45	5:15	980.8	107.7	986.7	1076.7
10:25	1:35	402.7	505.2	646.1	405.5	6:40	5:20	984.8	95.8	989.5	1085.3
10:20	1:40	422.6	500.2	654.9	425.8	6:35	5:25	988.4	84.0	991.9	1093.6
10:15	1:45	442.3	495.0	663.8	445.9	6:30	5:30	991.4	72.0	994.1	1101.5
10:10	1:50	461.7	489.6	673.0	465.9	6:25	5:35	994.1	60.1	995.9	1109.1
10:05	1:55	481.0	483.9	682.3	485.8	6:20	5:40	996.2	48.1	997.4	1116.4
10:00	2:00	500.0	478.0	691.7	505.4	6:15	5:45	997.9	36.1	998.5	1123.3
9:55	2:05	518.8	471.9	701.3	524.9	6:10	5:50	999.0	24.1	999.3	1129.9
9:50	2:10	537.3	465.5	710.9	544.2	6:05	5:55	999.8	12.0	999.8	1136.2
9:45	2:15	555.6	458.9	720.6	563.3	6:00	6:00	1000.0	0.0	1000.0	1142.2
9:40	2:20	573.6	452.1	730.3	582.2	5:55	6:05	999.8	-12.0	999.8	1147.9
9:35	2:25	591.3	445.1	740.1	600.9	5:50	6:10	999.0	-24.1	999.3	1153.2
9:30	2:30	608.8	437.9	749.9	619.4	5:45	6:15	997.9	-36.1	998.5	1158.2
9:25	2:35	625.9	430.4	759.6	637.6	5:40	6:20	996.2	-48.1	997.4	1163.0
9:20	2:40	642.8	422.8	769.4	655.6	5:35	6:25	994.1	-60.1	995.9	1167.4
9:15	2:45	659.3	415.0	779.1	673.4	5:30	6:30	991.4	-72.0	994.1	1171.5
9:10	2:50	675.6	406.9	788.7	691.0	5:25	6:35	988.4	-84.0	991.9	1175.3
9:05	2:55	691.5	398.7	798.2	708.3	5:20	6:40	984.8	-95.8	989.5	1178.8
9:00	3:00	707.1	390.3	807.7	725.4	5:15	6:45	980.8	-107.7	986.7	1182.0
8:55	3:05	722.4	381.7	817.0	742.2	5:10	6:50	976.3	-119.5	983.6	1184.9
8:50	3:10	737.3	372.9	826.2	758.7	5:05	6:55	971.3	-131.2	980.2	1187.5
8:45	3:15	751.8	363.9	835.3	775.0	5:00	7:00	965.9	-142.9	976.4	1189.9
8:40	3:20	766.0	354.8	844.2	791.0	4:55	7:05	960.0	-154.4	972.4	1191.9
8:35	3:25	779.9	345.5	853.0	806.8	4:50	7:10	953.7	-166.0	968.1	1193.7
8:30	3:30	793.4	336.0	861.6	822.2	4:45	7:15	946.9	-177.4	963.4	1195.3
8:25	3:35	806.4	326.4	870.0	837.4						
8:20	3:40	819.2	316.6	878.2	852.3						
8:15	3:45	831.5	306.6	886.2	866.9						

Analematic Sundial

Latitude: 33.5° N/S

Date Scale

Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 551.9 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-353.8	-347.1	-345.1	-335.9	-333.2	-321.8	-318.6	-305.0	-301.4	-286.0	-281.9
February	-255.9	-237.2	-232.4	-212.6	-207.6	-186.9	-181.5	-160.1	-154.7	-132.7	-127.0
March	-110.2	-87.6	-81.9	-59.0	-53.3	-30.3	-24.6	-1.5	4.2	27.2	32.9
April	67.1	89.6	95.2	117.2	122.7	144.3	149.6	170.7	175.9	196.2	201.1
May	225.3	243.8	248.3	265.5	269.7	285.5	289.2	303.7	307.1	319.8	322.6
June	338.3	346.4	348.3	354.3	355.7	359.5	360.0	361.4	361.5	359.0	360.2
July	355.7	350.0	348.3	340.6	338.4	328.5	325.8	313.9	310.8	297.3	293.7
August	270.6	253.8	249.5	231.6	227.0	208.1	203.1	183.3	178.3	157.7	152.4
September	120.6	98.8	93.4	71.2	65.6	43.3	37.7	15.1	9.5	-13.2	-18.9
October	-47.2	-69.9	-75.4	-98.0	-103.4	-125.7	-131.2	-152.9	-158.3	-179.5	-184.7
November	-215.2	-234.7	-239.4	-257.8	-262.3	-279.3	-283.4	-298.9	-302.5	-316.3	-319.6
December	-333.9	-343.5	-345.6	-352.6	-354.1	-358.6	-359.5	-361.4	-361.5	-360.7	-360.2

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	353.8	347.1	345.1	335.9	333.2	321.8	318.6	305.0	301.4	286.0	281.9
February	255.9	237.2	232.4	212.6	207.6	186.9	181.5	160.1	154.7	132.7	127.0
March	110.2	87.6	81.9	59.0	53.3	30.3	24.6	1.5	-4.2	-27.2	-32.9
April	-67.1	-89.6	-95.2	-117.2	-122.7	-144.3	-149.6	-170.7	-175.9	-196.2	-201.1
May	-225.3	-243.8	-248.3	-265.5	-269.7	-285.5	-289.2	-303.7	-307.1	-319.8	-322.6
June	-338.3	-346.4	-348.3	-354.3	-355.7	-359.5	-360.0	-361.4	-361.5	-359.0	-360.2
July	-355.7	-350.0	-348.3	-340.6	-338.4	-328.5	-325.8	-313.9	-310.8	-297.3	-293.7
August	-270.6	-253.8	-249.5	-231.6	-227.0	-208.1	-203.1	-183.3	-178.3	-157.7	-152.4
September	-120.6	-98.8	-93.4	-71.2	-65.6	-43.3	-37.7	-15.1	-9.5	13.2	18.9
October	47.2	69.9	75.4	98.0	103.4	125.7	131.2	152.9	158.3	179.5	184.7
November	215.2	234.7	239.4	257.8	262.3	279.3	283.4	298.9	302.5	316.3	319.6
December	333.9	343.5	345.6	352.6	354.1	358.6	359.5	361.4	361.5	360.7	360.2

Southern Hemisphere

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

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

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

Analemmatic Sundial

Latitude: 33.5° N/S

Earliest Sunrise: 4:48 a.m. Latest Sunset: 7:12 p.m.
 Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 827.9 mm
 Sunrise/Sunset Markers: X = ± 1011.6 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	827.9	827.9	0.0							
11:55	12:05	32.7	827.7	828.4	32.7	8:10	3:50	1265.1	444.8	1341.0	1321.8
11:50	12:10	65.4	827.1	829.7	65.4	8:05	3:55	1282.4	429.5	1352.4	1342.8
11:45	12:15	98.1	826.1	831.9	98.1	8:00	4:00	1299.0	414.0	1363.4	1363.4
11:40	12:20	130.7	824.8	835.1	130.8	7:55	4:05	1315.1	398.2	1374.1	1383.5
11:35	12:25	163.3	823.0	839.0	163.4	7:50	4:10	1330.5	382.3	1384.3	1403.2
11:30	12:30	195.8	820.8	843.9	195.9	7:45	4:15	1345.3	366.2	1394.3	1422.3
11:25	12:35	228.2	818.3	849.5	228.4	7:40	4:20	1359.5	349.9	1403.8	1441.1
11:20	12:40	260.5	815.3	855.9	260.8	7:35	4:25	1373.0	333.4	1412.9	1459.3
11:15	12:45	292.6	812.0	863.1	293.1	7:30	4:30	1385.8	316.8	1421.6	1477.1
11:10	12:50	324.7	808.3	871.0	325.3	7:25	4:35	1398.0	300.1	1429.9	1494.3
11:05	12:55	356.5	804.2	879.7	357.3	7:20	4:40	1409.5	283.2	1437.7	1511.1
11:00	1:00	388.2	799.7	889.0	389.3	7:15	4:45	1420.4	266.1	1445.1	1527.5
10:55	1:05	419.7	794.8	898.9	421.0	7:10	4:50	1430.6	249.0	1452.1	1543.3
10:50	1:10	451.1	789.6	909.3	452.7	7:05	4:55	1440.1	231.7	1458.6	1558.6
10:45	1:15	482.2	784.0	920.4	484.2	7:00	5:00	1448.9	214.3	1464.6	1573.5
10:40	1:20	513.0	778.0	931.9	515.5	6:55	5:05	1457.0	196.8	1470.2	1587.8
10:35	1:25	543.7	771.6	943.9	546.6	6:50	5:10	1464.4	179.2	1475.4	1601.7
10:30	1:30	574.0	764.9	956.3	577.5	6:45	5:15	1471.2	161.5	1480.0	1615.1
10:25	1:35	604.1	757.8	969.1	608.2	6:40	5:20	1477.2	143.8	1484.2	1627.9
10:20	1:40	633.9	750.3	982.3	638.7	6:35	5:25	1482.5	125.9	1487.9	1640.3
10:15	1:45	663.4	742.5	995.7	668.9	6:30	5:30	1487.2	108.1	1491.1	1652.2
10:10	1:50	692.6	734.4	1009.5	698.9	6:25	5:35	1491.1	90.1	1493.8	1663.6
10:05	1:55	721.5	725.8	1023.4	728.7	6:20	5:40	1494.3	72.2	1496.0	1674.5
10:00	2:00	750.0	717.0	1037.6	758.2	6:15	5:45	1496.8	54.1	1497.8	1685.0
9:55	2:05	778.2	707.8	1051.9	787.4	6:10	5:50	1498.6	36.1	1499.0	1694.9
9:50	2:10	805.9	698.2	1066.4	816.3	6:05	5:55	1499.6	18.1	1499.8	1704.3
9:45	2:15	833.4	688.4	1080.9	845.0	6:00	6:00	1500.0	0.0	1500.0	1713.3
9:40	2:20	860.4	678.2	1095.5	873.3	5:55	6:05	1499.6	-18.1	1499.8	1721.8
9:35	2:25	887.0	667.7	1110.2	901.3	5:50	6:10	1498.6	-36.1	1499.0	1729.8
9:30	2:30	913.1	656.8	1124.8	929.0	5:45	6:15	1496.8	-54.1	1497.8	1737.4
9:25	2:35	938.9	645.7	1139.5	956.4	5:40	6:20	1494.3	-72.2	1496.0	1744.4
9:20	2:40	964.2	634.2	1154.1	983.4	5:35	6:25	1491.1	-90.1	1493.8	1751.0
9:15	2:45	989.0	622.5	1168.6	1010.1	5:30	6:30	1487.2	-108.1	1491.1	1757.2
9:10	2:50	1013.4	610.4	1183.0	1036.5	5:25	6:35	1482.5	-125.9	1487.9	1762.9
9:05	2:55	1037.3	598.0	1197.3	1062.4	5:20	6:40	1477.2	-143.8	1484.2	1768.1
9:00	3:00	1060.7	585.4	1211.5	1088.0	5:15	6:45	1471.2	-161.5	1480.0	1772.9
8:55	3:05	1083.5	572.5	1225.5	1113.2	5:10	6:50	1464.4	-179.2	1475.4	1777.3
8:50	3:10	1105.9	559.3	1239.3	1138.1	5:05	6:55	1457.0	-196.8	1470.2	1781.3
8:45	3:15	1127.8	545.9	1252.9	1162.5	5:00	7:00	1448.9	-214.3	1464.6	1784.8
8:40	3:20	1149.1	532.2	1266.3	1186.5	4:55	7:05	1440.1	-231.7	1458.6	1787.9
8:35	3:25	1169.8	518.2	1279.5	1210.1	4:50	7:10	1430.6	-249.0	1452.1	1790.6
8:30	3:30	1190.0	504.0	1292.4	1233.3	4:45	7:15	1420.4	-266.1	1445.1	1792.9
8:25	3:35	1209.7	489.5	1305.0	1256.1						
8:20	3:40	1228.7	474.9	1317.3	1278.4						
8:15	3:45	1247.2	460.0	1329.3	1300.3						

Analemmatic Sundial

Latitude: 33.5° N/S

Date Scale

Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 827.9 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-530.7	-520.7	-517.6	-503.8	-499.8	-482.7	-477.9	-457.5	-452.1	-429.0	-422.9
February	-383.8	-355.8	-348.5	-318.8	-311.4	-280.3	-272.3	-240.2	-232.1	-199.0	-190.5
March	-165.3	-131.5	-122.9	-88.6	-80.0	-45.4	-36.9	-2.2	6.3	40.8	49.4
April	100.6	134.3	142.7	175.8	184.0	216.5	224.4	256.1	263.8	294.3	301.7
May	338.0	365.8	372.4	398.2	404.5	428.3	433.9	455.5	460.7	479.6	483.9
June	507.4	519.6	522.5	531.5	533.5	539.2	540.0	542.1	542.3	538.4	540.2
July	533.5	525.0	522.5	511.0	507.7	492.7	488.7	470.9	466.2	445.9	440.5
August	405.9	380.7	374.3	347.4	340.5	312.1	304.7	275.0	267.5	236.6	228.7
September	180.9	148.3	140.1	106.8	98.4	64.9	56.6	22.7	14.2	-19.9	-28.4
October	-70.8	-104.8	-113.2	-146.9	-155.1	-188.5	-196.8	-229.3	-237.5	-269.3	-277.1
November	-322.8	-352.1	-359.1	-386.7	-393.4	-419.0	-425.1	-448.4	-453.8	-474.4	-479.4
December	-500.8	-515.3	-518.4	-528.9	-531.2	-537.9	-539.2	-542.1	-542.3	-541.0	-540.2

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	530.7	520.7	517.6	503.8	499.8	482.7	477.9	457.5	452.1	429.0	422.9
February	383.8	355.8	348.5	318.8	311.4	280.3	272.3	240.2	232.1	199.0	190.5
March	165.3	131.5	122.9	88.6	80.0	45.4	36.9	2.2	-6.3	-40.8	-49.4
April	-100.6	-134.3	-142.7	-175.8	-184.0	-216.5	-224.4	-256.1	-263.8	-294.3	-301.7
May	-338.0	-365.8	-372.4	-398.2	-404.5	-428.3	-433.9	-455.5	-460.7	-479.6	-483.9
June	-507.4	-519.6	-522.5	-531.5	-533.5	-539.2	-540.0	-542.1	-542.3	-538.4	-540.2
July	-533.5	-525.0	-522.5	-511.0	-507.7	-492.7	-488.7	-470.9	-466.2	-445.9	-440.5
August	-405.9	-380.7	-374.3	-347.4	-340.5	-312.1	-304.7	-275.0	-267.5	-236.6	-228.7
September	-180.9	-148.3	-140.1	-106.8	-98.4	-64.9	-56.6	-22.7	-14.2	19.9	28.4
October	70.8	104.8	113.2	146.9	155.1	188.5	196.8	229.3	237.5	269.3	277.1
November	322.8	352.1	359.1	386.7	393.4	419.0	425.1	448.4	453.8	474.4	479.4
December	500.8	515.3	518.4	528.9	531.2	537.9	539.2	542.1	542.3	541.0	540.2

Southern Hemisphere

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

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

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

Analemmatic Sundial

Latitude: 33.5° N/S

Earliest Sunrise: 4:48 a.m. Latest Sunset: 7:12 p.m.
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1103.9 mm
 Sunrise/Sunset Markers: X = ± 1348.9 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	1103.9	1103.9	0.0							
11:55	12:05	43.6	1103.6	1104.5	43.6	8:10	3:50	1686.8	593.1	1788.0	1762.4
11:50	12:10	87.2	1102.8	1106.3	87.2	8:05	3:55	1709.8	572.7	1803.2	1790.4
11:45	12:15	130.8	1101.5	1109.3	130.8	8:00	4:00	1732.1	551.9	1817.9	1817.9
11:40	12:20	174.3	1099.7	1113.4	174.4	7:55	4:05	1753.5	531.0	1832.1	1844.7
11:35	12:25	217.7	1097.3	1118.7	217.8	7:50	4:10	1774.0	509.7	1845.8	1870.9
11:30	12:30	261.1	1094.4	1125.1	261.2	7:45	4:15	1793.7	488.2	1859.0	1896.5
11:25	12:35	304.2	1091.0	1132.7	304.5	7:40	4:20	1812.6	466.5	1871.7	1921.4
11:20	12:40	347.3	1087.1	1141.2	347.7	7:35	4:25	1830.6	444.6	1883.8	1945.7
11:15	12:45	390.2	1082.7	1150.8	390.8	7:30	4:30	1847.8	422.4	1895.4	1969.4
11:10	12:50	432.9	1077.7	1161.4	433.7	7:25	4:35	1864.0	400.1	1906.5	1992.5
11:05	12:55	475.4	1072.2	1172.9	476.4	7:20	4:40	1879.4	377.5	1916.9	2014.9
11:00	1:00	517.6	1066.3	1185.3	519.0	7:15	4:45	1893.9	354.8	1926.8	2036.6
10:55	1:05	559.7	1059.8	1198.5	561.4	7:10	4:50	1907.4	331.9	1936.1	2057.7
10:50	1:10	601.4	1052.8	1212.5	603.6	7:05	4:55	1920.1	308.9	1944.8	2078.2
10:45	1:15	642.9	1045.3	1227.2	645.5	7:00	5:00	1931.9	285.7	1952.9	2098.0
10:40	1:20	684.0	1037.3	1242.5	687.3	6:55	5:05	1942.7	262.4	1960.3	2117.1
10:35	1:25	724.9	1028.8	1258.5	728.8	6:50	5:10	1952.6	238.9	1967.2	2135.6
10:30	1:30	765.4	1019.8	1275.1	770.0	6:45	5:15	1961.6	215.4	1973.4	2153.4
10:25	1:35	805.5	1010.4	1292.2	810.9	6:40	5:20	1969.6	191.7	1978.9	2170.6
10:20	1:40	845.2	1000.4	1309.7	851.5	6:35	5:25	1976.7	167.9	1983.8	2187.1
10:15	1:45	884.6	990.0	1327.6	891.9	6:30	5:30	1982.9	144.1	1988.1	2203.0
10:10	1:50	923.5	979.1	1345.9	931.9	6:25	5:35	1988.1	120.2	1991.7	2218.2
10:05	1:55	962.0	967.8	1364.6	971.6	6:20	5:40	1992.4	96.2	1994.7	2232.7
10:00	2:00	1000.0	956.0	1383.4	1010.9	6:15	5:45	1995.7	72.2	1997.0	2246.6
9:55	2:05	1037.5	943.7	1402.5	1049.8	6:10	5:50	1998.1	48.2	1998.7	2259.9
9:50	2:10	1074.6	931.0	1421.8	1088.4	6:05	5:55	1999.5	24.1	1999.7	2272.5
9:45	2:15	1111.1	917.8	1441.2	1126.6	6:00	6:00	2000.0	0.0	2000.0	2284.4
9:40	2:20	1147.2	904.2	1460.7	1164.4	5:55	6:05	1999.5	-24.1	1999.7	2295.7
9:35	2:25	1182.6	890.2	1480.2	1201.8	5:50	6:10	1998.1	-48.2	1998.7	2306.4
9:30	2:30	1217.5	875.8	1499.8	1238.7	5:45	6:15	1995.7	-72.2	1997.0	2316.5
9:25	2:35	1251.8	860.9	1519.3	1275.2	5:40	6:20	1992.4	-96.2	1994.7	2325.9
9:20	2:40	1285.6	845.6	1538.8	1311.3	5:35	6:25	1988.1	-120.2	1991.7	2334.7
9:15	2:45	1318.7	829.9	1558.1	1346.8	5:30	6:30	1982.9	-144.1	1988.1	2342.9
9:10	2:50	1351.2	813.9	1577.4	1382.0	5:25	6:35	1976.7	-167.9	1983.8	2350.5
9:05	2:55	1383.0	797.4	1596.4	1416.6	5:20	6:40	1969.6	-191.7	1978.9	2357.5
9:00	3:00	1414.2	780.6	1615.3	1450.7	5:15	6:45	1961.6	-215.4	1973.4	2363.9
8:55	3:05	1444.7	763.3	1634.0	1484.3	5:10	6:50	1952.6	-238.9	1967.2	2369.8
8:50	3:10	1474.6	745.8	1652.4	1517.4	5:05	6:55	1942.7	-262.4	1960.3	2375.0
8:45	3:15	1503.7	727.8	1670.6	1550.0	5:00	7:00	1931.9	-285.7	1952.9	2379.7
8:40	3:20	1532.1	709.6	1688.4	1582.0	4:55	7:05	1920.1	-308.9	1944.8	2383.8
8:35	3:25	1559.8	690.9	1706.0	1613.5	4:50	7:10	1907.4	-331.9	1936.1	2387.4
8:30	3:30	1586.7	672.0	1723.1	1644.4	4:45	7:15	1893.9	-354.8	1926.8	2390.5
8:25	3:35	1612.9	652.7	1740.0	1674.8						
8:20	3:40	1638.3	633.2	1756.4	1704.6						
8:15	3:45	1662.9	613.3	1772.4	1733.8						

Analemmatic Sundial

Latitude: 33.5° N/S

Date Scale

Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1103.9 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-707.6	-694.2	-690.1	-671.8	-666.4	-643.5	-637.2	-610.0	-602.7	-572.0	-563.9
February	-511.8	-474.4	-464.7	-425.1	-415.2	-373.7	-363.0	-320.3	-309.4	-265.3	-254.0
March	-220.5	-175.3	-163.8	-118.1	-106.7	-60.6	-49.2	-2.9	8.4	54.5	65.8
April	134.2	179.1	190.3	234.4	245.4	288.7	299.2	341.4	351.8	392.4	402.2
May	450.6	487.7	496.6	531.0	539.3	571.0	578.5	607.3	614.3	639.5	645.2
June	676.5	692.9	696.6	708.6	711.4	718.9	720.0	722.7	723.1	717.9	720.3
July	711.4	700.0	696.6	681.3	676.9	657.0	651.6	627.9	621.6	594.5	587.3
August	541.2	507.7	499.1	463.1	454.1	416.1	406.3	366.7	356.6	315.4	304.9
September	241.2	197.7	186.8	142.4	131.3	86.5	75.4	30.3	18.9	-26.5	-37.8
October	-94.4	-139.8	-150.9	-195.9	-206.8	-251.3	-262.4	-305.8	-316.6	-359.1	-369.4
November	-430.4	-469.4	-478.9	-515.6	-524.6	-558.7	-566.8	-597.8	-605.0	-632.5	-639.2
December	-667.7	-687.1	-691.2	-705.2	-708.3	-717.2	-718.9	-722.7	-723.1	-721.4	-720.3

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	707.6	694.2	690.1	671.8	666.4	643.5	637.2	610.0	602.7	572.0	563.9
February	511.8	474.4	464.7	425.1	415.2	373.7	363.0	320.3	309.4	265.3	254.0
March	220.5	175.3	163.8	118.1	106.7	60.6	49.2	2.9	-8.4	-54.5	-65.8
April	-134.2	-179.1	-190.3	-234.4	-245.4	-288.7	-299.2	-341.4	-351.8	-392.4	-402.2
May	-450.6	-487.7	-496.6	-531.0	-539.3	-571.0	-578.5	-607.3	-614.3	-639.5	-645.2
June	-676.5	-692.9	-696.6	-708.6	-711.4	-718.9	-720.0	-722.7	-723.1	-717.9	-720.3
July	-711.4	-700.0	-696.6	-681.3	-676.9	-657.0	-651.6	-627.9	-621.6	-594.5	-587.3
August	-541.2	-507.7	-499.1	-463.1	-454.1	-416.1	-406.3	-366.7	-356.6	-315.4	-304.9
September	-241.2	-197.7	-186.8	-142.4	-131.3	-86.5	-75.4	-30.3	-18.9	26.5	37.8
October	94.4	139.8	150.9	195.9	206.8	251.3	262.4	305.8	316.6	359.1	369.4
November	430.4	469.4	478.9	515.6	524.6	558.7	566.8	597.8	605.0	632.5	639.2
December	667.7	687.1	691.2	705.2	708.3	717.2	718.9	722.7	723.1	721.4	720.3

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: 33.5° N/S

Earliest Sunrise: 4:48 a.m. Latest Sunset: 7:12 p.m.
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 1379.8 mm
 Sunrise/Sunset Markers: X = ± 1686.1 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	1379.8	1379.8	0.0							
11:55	12:05	54.5	1379.5	1380.6	54.5	8:10	3:50	2108.5	741.4	2235.0	2203.0
11:50	12:10	109.0	1378.5	1382.8	109.1	8:05	3:55	2137.3	715.8	2254.0	2238.1
11:45	12:15	163.5	1376.9	1386.6	163.5	8:00	4:00	2165.1	689.9	2272.3	2272.3
11:40	12:20	217.9	1374.6	1391.8	218.0	7:55	4:05	2191.8	663.7	2290.1	2305.8
11:35	12:25	272.2	1371.6	1398.4	272.3	7:50	4:10	2217.5	637.1	2307.2	2338.6
11:30	12:30	326.3	1368.0	1406.4	326.5	7:45	4:15	2242.2	610.3	2323.8	2370.6
11:25	12:35	380.3	1363.8	1415.8	380.6	7:40	4:20	2265.8	583.1	2339.6	2401.8
11:20	12:40	434.1	1358.9	1426.5	434.6	7:35	4:25	2288.3	555.7	2354.8	2432.2
11:15	12:45	487.7	1353.3	1438.5	488.4	7:30	4:30	2309.7	528.0	2369.3	2461.8
11:10	12:50	541.1	1347.1	1451.7	542.1	7:25	4:35	2330.0	500.1	2383.1	2490.6
11:05	12:55	594.2	1340.3	1466.1	595.5	7:20	4:40	2349.2	471.9	2396.2	2518.6
11:00	1:00	647.0	1332.8	1481.6	648.8	7:15	4:45	2367.3	443.5	2408.5	2545.8
10:55	1:05	699.6	1324.7	1498.1	701.7	7:10	4:50	2384.3	414.9	2420.1	2572.1
10:50	1:10	751.8	1316.0	1515.6	754.5	7:05	4:55	2400.1	386.1	2431.0	2597.7
10:45	1:15	803.6	1306.6	1534.0	806.9	7:00	5:00	2414.8	357.1	2441.1	2622.5
10:40	1:20	855.1	1296.6	1553.2	859.1	6:55	5:05	2428.4	328.0	2450.4	2646.4
10:35	1:25	906.1	1286.0	1573.2	910.9	6:50	5:10	2440.7	298.7	2458.9	2669.5
10:30	1:30	956.7	1274.8	1593.9	962.5	6:45	5:15	2452.0	269.2	2466.7	2691.8
10:25	1:35	1006.9	1263.0	1615.2	1013.6	6:40	5:20	2462.0	239.6	2473.7	2713.2
10:20	1:40	1056.5	1250.6	1637.1	1064.4	6:35	5:25	2470.9	209.9	2479.8	2733.9
10:15	1:45	1105.7	1237.5	1659.6	1114.8	6:30	5:30	2478.6	180.1	2485.1	2753.7
10:10	1:50	1154.4	1223.9	1682.4	1164.9	6:25	5:35	2485.1	150.2	2489.7	2772.7
10:05	1:55	1202.5	1209.7	1705.7	1214.4	6:20	5:40	2490.5	120.3	2493.4	2790.9
10:00	2:00	1250.0	1195.0	1729.3	1263.6	6:15	5:45	2494.6	90.2	2496.3	2808.3
9:55	2:05	1296.9	1179.6	1753.2	1312.3	6:10	5:50	2497.6	60.2	2498.3	2824.8
9:50	2:10	1343.2	1163.7	1777.3	1360.5	6:05	5:55	2499.4	30.1	2499.6	2840.6
9:45	2:15	1388.9	1147.3	1801.5	1408.3	6:00	6:00	2500.0	0.0	2500.0	2855.5
9:40	2:20	1433.9	1130.3	1825.9	1455.5	5:55	6:05	2499.4	-30.1	2499.6	2869.7
9:35	2:25	1478.3	1112.8	1850.3	1502.2	5:50	6:10	2497.6	-60.2	2498.3	2883.0
9:30	2:30	1521.9	1094.7	1874.7	1548.4	5:45	6:15	2494.6	-90.2	2496.3	2895.6
9:25	2:35	1564.8	1076.1	1899.1	1594.0	5:40	6:20	2490.5	-120.3	2493.4	2907.4
9:20	2:40	1607.0	1057.0	1923.4	1639.1	5:35	6:25	2485.1	-150.2	2489.7	2918.4
9:15	2:45	1648.4	1037.4	1947.7	1683.6	5:30	6:30	2478.6	-180.1	2485.1	2928.6
9:10	2:50	1689.0	1017.3	1971.7	1727.4	5:25	6:35	2470.9	-209.9	2479.8	2938.1
9:05	2:55	1728.8	996.7	1995.5	1770.7	5:20	6:40	2462.0	-239.6	2473.7	2946.9
9:00	3:00	1767.8	975.7	2019.2	1813.4	5:15	6:45	2452.0	-269.2	2466.7	2954.9
8:55	3:05	1805.9	954.2	2042.5	1855.4	5:10	6:50	2440.7	-298.7	2458.9	2962.2
8:50	3:10	1843.2	932.2	2065.5	1896.8	5:05	6:55	2428.4	-328.0	2450.4	2968.8
8:45	3:15	1879.6	909.8	2088.2	1937.5	5:00	7:00	2414.8	-357.1	2441.1	2974.6
8:40	3:20	1915.1	886.9	2110.5	1977.5	4:55	7:05	2400.1	-386.1	2431.0	2979.8
8:35	3:25	1949.7	863.7	2132.4	2016.9	4:50	7:10	2384.3	-414.9	2420.1	2984.3
8:30	3:30	1983.4	840.0	2153.9	2055.5	4:45	7:15	2367.3	-443.5	2408.5	2988.1
8:25	3:35	2016.1	815.9	2175.0	2093.5						
8:20	3:40	2047.9	791.4	2195.5	2130.7						
8:15	3:45	2078.7	766.6	2215.5	2167.2						

Analemmatic Sundial

Latitude: 33.5° N/S

Date Scale

Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 1479.8 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-884.5	-867.8	-862.7	-839.7	-833.0	-804.4	-796.5	-762.5	-753.4	-715.0	-704.8
February	-639.7	-593.1	-580.9	-531.4	-519.0	-467.1	-453.8	-400.3	-386.8	-331.7	-317.5
March	-275.6	-219.1	-204.8	-147.6	-133.4	-75.7	-61.5	-3.6	10.6	68.1	82.3
April	167.7	223.9	237.9	293.0	306.7	360.8	374.0	426.8	439.7	490.5	502.8
May	563.3	609.6	620.7	663.7	674.1	713.8	723.1	759.2	767.9	799.4	806.5
June	845.7	866.1	870.8	885.8	889.2	898.7	900.0	903.4	903.9	897.4	900.4
July	889.2	875.0	870.8	851.6	846.1	821.2	814.5	784.8	777.0	743.2	734.1
August	676.6	634.6	623.9	578.9	567.6	520.2	507.8	458.4	445.8	394.3	381.1
September	301.5	247.1	233.5	178.0	164.1	108.2	94.3	37.8	23.7	-33.1	-47.3
October	-118.0	-174.7	-188.6	-244.9	-258.6	-314.2	-327.9	-382.2	-395.8	-448.8	-461.8
November	-538.0	-586.8	-598.6	-644.5	-655.7	-698.3	-708.5	-747.3	-756.3	-790.7	-799.0
December	-834.7	-858.8	-863.9	-881.5	-885.3	-896.5	-898.7	-903.4	-903.9	-901.7	-900.4

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	884.5	867.8	862.7	839.7	833.0	804.4	796.5	762.5	753.4	715.0	704.8
February	639.7	593.1	580.9	531.4	519.0	467.1	453.8	400.3	386.8	331.7	317.5
March	275.6	219.1	204.8	147.6	133.4	75.7	61.5	3.6	-10.6	-68.1	-82.3
April	-167.7	-223.9	-237.9	-293.0	-306.7	-360.8	-374.0	-426.8	-439.7	-490.5	-502.8
May	-563.3	-609.6	-620.7	-663.7	-674.1	-713.8	-723.1	-759.2	-767.9	-799.4	-806.5
June	-845.7	-866.1	-870.8	-885.8	-889.2	-898.7	-900.0	-903.4	-903.9	-897.4	-900.4
July	-889.2	-875.0	-870.8	-851.6	-846.1	-821.2	-814.5	-784.8	-777.0	-743.2	-734.1
August	-676.6	-634.6	-623.9	-578.9	-567.6	-520.2	-507.8	-458.4	-445.8	-394.3	-381.1
September	-301.5	-247.1	-233.5	-178.0	-164.1	-108.2	-94.3	-37.8	-23.7	33.1	47.3
October	118.0	174.7	188.6	244.9	258.6	314.2	327.9	382.2	395.8	448.8	461.8
November	538.0	586.8	598.6	644.5	655.7	698.3	708.5	747.3	756.3	790.7	799.0
December	834.7	858.8	863.9	881.5	885.3	896.5	898.7	903.4	903.9	901.7	900.4

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 |