

Analemmatic Sundial

Latitude: 39.5° N/S

Earliest Sunrise: 4:31 a.m. Latest Sunset: 7:29 p.m.
 Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 636.1 mm
 Sunrise/Sunset Markers: X = ± 567.4 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	636.1	636.1	0.0							
11:55	12:05	21.8	635.9	636.3	21.8	8:10	3:50	843.4	341.8	910.0	893.3
11:50	12:10	43.6	635.5	637.0	43.6	8:05	3:55	854.9	330.0	916.4	908.1
11:45	12:15	65.4	634.7	638.1	65.4	8:00	4:00	866.0	318.0	922.6	922.6
11:40	12:20	87.2	633.7	639.6	87.2	7:55	4:05	876.7	305.9	928.6	936.8
11:35	12:25	108.9	632.3	641.6	108.9	7:50	4:10	887.0	293.7	934.4	950.8
11:30	12:30	130.5	630.6	644.0	130.6	7:45	4:15	896.9	281.3	940.0	964.5
11:25	12:35	152.1	628.7	646.8	152.3	7:40	4:20	906.3	268.8	945.3	977.9
11:20	12:40	173.6	626.4	650.0	173.9	7:35	4:25	915.3	256.2	950.5	991.0
11:15	12:45	195.1	623.9	653.6	195.5	7:30	4:30	923.9	243.4	955.4	1003.9
11:10	12:50	216.4	621.0	657.6	217.0	7:25	4:35	932.0	230.5	960.1	1016.4
11:05	12:55	237.7	617.8	662.0	238.4	7:20	4:40	939.7	217.6	964.5	1028.7
11:00	1:00	258.8	614.4	666.7	259.7	7:15	4:45	946.9	204.5	968.8	1040.7
10:55	1:05	279.8	610.7	671.7	281.0	7:10	4:50	953.7	191.3	972.7	1052.3
10:50	1:10	300.7	606.6	677.1	302.1	7:05	4:55	960.0	178.0	976.4	1063.7
10:45	1:15	321.4	602.3	682.7	323.2	7:00	5:00	965.9	164.6	979.9	1074.8
10:40	1:20	342.0	597.7	688.7	344.2	6:55	5:05	971.3	151.2	983.0	1085.6
10:35	1:25	362.4	592.8	694.8	365.0	6:50	5:10	976.3	137.7	986.0	1096.2
10:30	1:30	382.7	587.7	701.3	385.7	6:45	5:15	980.8	124.1	988.6	1106.4
10:25	1:35	402.7	582.2	707.9	406.3	6:40	5:20	984.8	110.5	991.0	1116.3
10:20	1:40	422.6	576.5	714.8	426.8	6:35	5:25	988.4	96.8	993.1	1125.9
10:15	1:45	442.3	570.5	721.9	447.1	6:30	5:30	991.4	83.0	994.9	1135.3
10:10	1:50	461.7	564.2	729.1	467.3	6:25	5:35	994.1	69.2	996.5	1144.3
10:05	1:55	481.0	557.7	736.4	487.3	6:20	5:40	996.2	55.4	997.7	1153.1
10:00	2:00	500.0	550.9	743.9	507.2	6:15	5:45	997.9	41.6	998.7	1161.5
9:55	2:05	518.8	543.8	751.6	526.9	6:10	5:50	999.0	27.7	999.4	1169.7
9:50	2:10	537.3	536.5	759.3	546.5	6:05	5:55	999.8	13.9	999.9	1177.6
9:45	2:15	555.6	528.9	767.1	565.8	6:00	6:00	1000.0	0.0	1000.0	1185.2
9:40	2:20	573.6	521.0	774.9	585.0	5:55	6:05	999.8	-13.9	999.9	1192.5
9:35	2:25	591.3	513.0	782.8	604.0	5:50	6:10	999.0	-27.7	999.4	1199.5
9:30	2:30	608.8	504.6	790.7	622.8	5:45	6:15	997.9	-41.6	998.7	1206.2
9:25	2:35	625.9	496.1	798.7	641.4	5:40	6:20	996.2	-55.4	997.7	1212.7
9:20	2:40	642.8	487.3	806.6	659.8	5:35	6:25	994.1	-69.2	996.5	1218.9
9:15	2:45	659.3	478.2	814.5	678.0	5:30	6:30	991.4	-83.0	994.9	1224.8
9:10	2:50	675.6	469.0	822.4	696.0	5:25	6:35	988.4	-96.8	993.1	1230.4
9:05	2:55	691.5	459.5	830.2	713.7	5:20	6:40	984.8	-110.5	991.0	1235.8
9:00	3:00	707.1	449.8	838.0	731.2	5:15	6:45	980.8	-124.1	988.6	1240.9
8:55	3:05	722.4	439.9	845.7	748.5	5:10	6:50	976.3	-137.7	986.0	1245.7
8:50	3:10	737.3	429.7	853.4	765.6	5:05	6:55	971.3	-151.2	983.0	1250.3
8:45	3:15	751.8	419.4	860.9	782.4	5:00	7:00	965.9	-164.6	979.9	1254.6
8:40	3:20	766.0	408.9	868.3	799.0	4:55	7:05	960.0	-178.0	976.4	1258.7
8:35	3:25	779.9	398.1	875.6	815.4	4:50	7:10	953.7	-191.3	972.7	1262.6
8:30	3:30	793.4	387.2	882.8	831.5	4:45	7:15	946.9	-204.5	968.8	1266.2
8:25	3:35	806.4	376.1	889.8	847.3	4:40	7:20	939.7	-217.6	964.5	1269.5
8:20	3:40	819.2	364.8	896.7	862.9	4:35	7:25	932.0	-230.5	960.1	1272.7
8:15	3:45	831.5	353.4	903.5	878.2	4:30	7:30	923.9	-243.4	955.4	1275.6

Analematic Sundial

Latitude: 39.5° N/S

Date Scale

Semi-Major Axis (E-W): 1000 mm Semi-Minor Axis (N-S): 636.1 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-327.4	-321.2	-319.3	-310.8	-308.3	-297.7	-294.8	-282.2	-278.9	-264.6	-260.9
February	-236.8	-219.5	-215.0	-196.7	-192.1	-172.9	-168.0	-148.2	-143.2	-122.8	-117.5
March	-102.0	-81.1	-75.8	-54.6	-49.4	-28.0	-22.8	-1.3	3.9	25.2	30.5
April	62.1	82.9	88.1	108.4	113.5	133.6	138.4	158.0	162.7	181.6	186.1
May	208.5	225.6	229.7	245.7	249.5	264.2	267.7	281.0	284.2	295.9	298.5
June	313.0	320.6	322.3	327.9	329.1	332.6	333.1	334.4	334.6	332.2	333.3
July	329.1	323.9	322.3	315.2	313.2	304.0	301.5	290.5	287.6	275.1	271.7
August	250.4	234.9	230.9	214.3	210.1	192.5	188.0	169.7	165.0	145.9	141.1
September	111.6	91.5	86.4	65.9	60.7	40.0	34.9	14.0	8.8	-12.3	-17.5
October	-43.7	-64.7	-69.8	-90.6	-95.7	-116.3	-121.4	-141.5	-146.5	-166.1	-170.9
November	-199.1	-217.2	-221.6	-238.6	-242.7	-258.5	-262.2	-276.6	-279.9	-292.7	-295.7
December	-308.9	-317.9	-319.8	-326.3	-327.7	-331.8	-332.6	-334.4	-334.6	-333.8	-333.3

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	327.4	321.2	319.3	310.8	308.3	297.7	294.8	282.2	278.9	264.6	260.9
February	236.8	219.5	215.0	196.7	192.1	172.9	168.0	148.2	143.2	122.8	117.5
March	102.0	81.1	75.8	54.6	49.4	28.0	22.8	1.3	-3.9	-25.2	-30.5
April	-62.1	-82.9	-88.1	-108.4	-113.5	-133.6	-138.4	-158.0	-162.7	-181.6	-186.1
May	-208.5	-225.6	-229.7	-245.7	-249.5	-264.2	-267.7	-281.0	-284.2	-295.9	-298.5
June	-313.0	-320.6	-322.3	-327.9	-329.1	-332.6	-333.1	-334.4	-334.6	-332.2	-333.3
July	-329.1	-323.9	-322.3	-315.2	-313.2	-304.0	-301.5	-290.5	-287.6	-275.1	-271.7
August	-250.4	-234.9	-230.9	-214.3	-210.1	-192.5	-188.0	-169.7	-165.0	-145.9	-141.1
September	-111.6	-91.5	-86.4	-65.9	-60.7	-40.0	-34.9	-14.0	-8.8	12.3	17.5
October	43.7	64.7	69.8	90.6	95.7	116.3	121.4	141.5	146.5	166.1	170.9
November	199.1	217.2	221.6	238.6	242.7	258.5	262.2	276.6	279.9	292.7	295.7
December	308.9	317.9	319.8	326.3	327.7	331.8	332.6	334.4	334.6	333.8	333.3

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: 39.5° N/S

Earliest Sunrise: 4:31 a.m. Latest Sunset: 7:29 p.m.
 Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 954.1 mm
 Sunrise/Sunset Markers: X = ± 851.0 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	954.1	954.1	0.0							
11:55	12:05	32.7	953.9	954.5	32.7	8:10	3:50	1265.1	512.6	1365.0	1339.9
11:50	12:10	65.4	953.2	955.5	65.4	8:05	3:55	1282.4	495.0	1374.6	1362.1
11:45	12:15	98.1	952.1	957.1	98.1	8:00	4:00	1299.0	477.1	1383.9	1383.9
11:40	12:20	130.7	950.5	959.4	130.8	7:55	4:05	1315.1	458.9	1392.9	1405.2
11:35	12:25	163.3	948.4	962.4	163.4	7:50	4:10	1330.5	440.6	1401.6	1426.2
11:30	12:30	195.8	946.0	966.0	196.0	7:45	4:15	1345.3	422.0	1409.9	1446.7
11:25	12:35	228.2	943.0	970.2	228.5	7:40	4:20	1359.5	403.2	1418.0	1466.8
11:20	12:40	260.5	939.6	975.1	260.9	7:35	4:25	1373.0	384.3	1425.7	1486.5
11:15	12:45	292.6	935.8	980.5	293.2	7:30	4:30	1385.8	365.1	1433.1	1505.8
11:10	12:50	324.7	931.5	986.5	325.4	7:25	4:35	1398.0	345.8	1440.1	1524.6
11:05	12:55	356.5	926.8	993.0	357.6	7:20	4:40	1409.5	326.3	1446.8	1543.0
11:00	1:00	388.2	921.6	1000.0	389.6	7:15	4:45	1420.4	306.7	1453.1	1561.0
10:55	1:05	419.7	916.0	1007.6	421.5	7:10	4:50	1430.6	286.9	1459.1	1578.5
10:50	1:10	451.1	910.0	1015.6	453.2	7:05	4:55	1440.1	267.0	1464.6	1595.6
10:45	1:15	482.2	903.5	1024.1	484.8	7:00	5:00	1448.9	246.9	1469.8	1612.3
10:40	1:20	513.0	896.6	1033.0	516.2	6:55	5:05	1457.0	226.8	1474.6	1628.5
10:35	1:25	543.7	889.2	1042.3	547.5	6:50	5:10	1464.4	206.5	1478.9	1644.2
10:30	1:30	574.0	881.5	1051.9	578.6	6:45	5:15	1471.2	186.1	1482.9	1659.6
10:25	1:35	604.1	873.3	1061.9	609.5	6:40	5:20	1477.2	165.7	1486.5	1674.5
10:20	1:40	633.9	864.7	1072.2	640.2	6:35	5:25	1482.5	145.1	1489.6	1688.9
10:15	1:45	663.4	855.7	1082.8	670.7	6:30	5:30	1487.2	124.5	1492.4	1702.9
10:10	1:50	692.6	846.3	1093.6	701.0	6:25	5:35	1491.1	103.9	1494.7	1716.5
10:05	1:55	721.5	836.5	1104.7	731.0	6:20	5:40	1494.3	83.2	1496.6	1729.6
10:00	2:00	750.0	826.3	1115.9	760.8	6:15	5:45	1496.8	62.4	1498.1	1742.3
9:55	2:05	778.2	815.7	1127.3	790.4	6:10	5:50	1498.6	41.6	1499.2	1754.5
9:50	2:10	805.9	804.7	1138.9	819.7	6:05	5:55	1499.6	20.8	1499.8	1766.3
9:45	2:15	833.4	793.3	1150.6	848.7	6:00	6:00	1500.0	0.0	1500.0	1777.7
9:40	2:20	860.4	781.6	1162.4	877.5	5:55	6:05	1499.6	-20.8	1499.8	1788.7
9:35	2:25	887.0	769.4	1174.2	906.0	5:50	6:10	1498.6	-41.6	1499.2	1799.2
9:30	2:30	913.1	757.0	1186.1	934.2	5:45	6:15	1496.8	-62.4	1498.1	1809.3
9:25	2:35	938.9	744.1	1198.0	962.1	5:40	6:20	1494.3	-83.2	1496.6	1819.0
9:20	2:40	964.2	730.9	1209.9	989.7	5:35	6:25	1491.1	-103.9	1494.7	1828.3
9:15	2:45	989.0	717.3	1221.8	1017.0	5:30	6:30	1487.2	-124.5	1492.4	1837.2
9:10	2:50	1013.4	703.4	1233.6	1043.9	5:25	6:35	1482.5	-145.1	1489.6	1845.6
9:05	2:55	1037.3	689.2	1245.4	1070.6	5:20	6:40	1477.2	-165.7	1486.5	1853.7
9:00	3:00	1060.7	674.7	1257.0	1096.9	5:15	6:45	1471.2	-186.1	1482.9	1861.3
8:55	3:05	1083.5	659.8	1268.6	1122.8	5:10	6:50	1464.4	-206.5	1478.9	1868.6
8:50	3:10	1105.9	644.6	1280.1	1148.4	5:05	6:55	1457.0	-226.8	1474.6	1875.5
8:45	3:15	1127.8	629.1	1291.4	1173.7	5:00	7:00	1448.9	-246.9	1469.8	1882.0
8:40	3:20	1149.1	613.3	1302.5	1198.5	4:55	7:05	1440.1	-267.0	1464.6	1888.1
8:35	3:25	1169.8	597.2	1313.4	1223.1	4:50	7:10	1430.6	-286.9	1459.1	1893.9
8:30	3:30	1190.0	580.8	1324.2	1247.2	4:45	7:15	1420.4	-306.7	1453.1	1899.3
8:25	3:35	1209.7	564.2	1334.8	1271.0	4:40	7:20	1409.5	-326.3	1446.8	1904.3
8:20	3:40	1228.7	547.3	1345.1	1294.3	4:35	7:25	1398.0	-345.8	1440.1	1909.0
8:15	3:45	1247.2	530.1	1355.2	1317.3	4:30	7:30	1385.8	-365.1	1433.1	1913.3

Analematic Sundial

Latitude: 39.5° N/S

Date Scale

Semi-Major Axis (E-W): 1500 mm Semi-Minor Axis (N-S): 954.1 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-491.1	-481.8	-479.0	-466.2	-462.5	-446.6	-442.2	-423.3	-418.3	-397.0	-391.3
February	-355.2	-329.3	-322.5	-295.0	-288.2	-259.4	-251.9	-222.3	-214.7	-184.1	-176.3
March	-153.0	-121.7	-113.7	-82.0	-74.0	-42.0	-34.1	-2.0	5.9	37.8	45.7
April	93.1	124.3	132.1	162.7	170.3	200.3	207.6	237.0	244.1	272.3	279.2
May	312.7	338.5	344.6	368.5	374.3	396.3	401.5	421.5	426.3	443.8	447.8
June	469.5	480.8	483.5	491.8	493.7	499.0	499.7	501.6	501.8	498.2	499.9
July	493.7	485.8	483.5	472.8	469.8	455.9	452.2	435.7	431.4	412.6	407.6
August	375.6	352.3	346.4	321.4	315.1	288.8	281.9	254.5	247.5	218.9	211.6
September	167.4	137.2	129.6	98.8	91.1	60.1	52.4	21.0	13.1	-18.4	-26.3
October	-65.5	-97.0	-104.7	-136.0	-143.6	-174.4	-182.1	-212.2	-219.7	-249.2	-256.4
November	-298.7	-325.8	-332.3	-357.8	-364.1	-387.7	-393.3	-414.9	-419.9	-439.0	-443.6
December	-463.4	-476.8	-479.7	-489.4	-491.5	-497.8	-499.0	-501.6	-501.8	-500.6	-499.9

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	491.1	481.8	479.0	466.2	462.5	446.6	442.2	423.3	418.3	397.0	391.3
February	355.2	329.3	322.5	295.0	288.2	259.4	251.9	222.3	214.7	184.1	176.3
March	153.0	121.7	113.7	82.0	74.0	42.0	34.1	2.0	-5.9	-37.8	-45.7
April	-93.1	-124.3	-132.1	-162.7	-170.3	-200.3	-207.6	-237.0	-244.1	-272.3	-279.2
May	-312.7	-338.5	-344.6	-368.5	-374.3	-396.3	-401.5	-421.5	-426.3	-443.8	-447.8
June	-469.5	-480.8	-483.5	-491.8	-493.7	-499.0	-499.7	-501.6	-501.8	-498.2	-499.9
July	-493.7	-485.8	-483.5	-472.8	-469.8	-455.9	-452.2	-435.7	-431.4	-412.6	-407.6
August	-375.6	-352.3	-346.4	-321.4	-315.1	-288.8	-281.9	-254.5	-247.5	-218.9	-211.6
September	-167.4	-137.2	-129.6	-98.8	-91.1	-60.1	-52.4	-21.0	-13.1	18.4	26.3
October	65.5	97.0	104.7	136.0	143.6	174.4	182.1	212.2	219.7	249.2	256.4
November	298.7	325.8	332.3	357.8	364.1	387.7	393.3	414.9	419.9	439.0	443.6
December	463.4	476.8	479.7	489.4	491.5	497.8	499.0	501.6	501.8	500.6	499.9

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: 39.5° N/S

Earliest Sunrise: 4:31 a.m. Latest Sunset: 7:29 p.m.
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1272.2 mm
 Sunrise/Sunset Markers: X = ± 1134.7 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	1272.2	1272.2	0.0							
11:55	12:05	43.6	1271.9	1272.6	43.6	8:10	3:50	1686.8	683.5	1820.0	1786.5
11:50	12:10	87.2	1270.9	1273.9	87.2	8:05	3:55	1709.8	660.0	1832.8	1816.1
11:45	12:15	130.8	1269.4	1276.2	130.8	8:00	4:00	1732.1	636.1	1845.2	1845.2
11:40	12:20	174.3	1267.3	1279.2	174.4	7:55	4:05	1753.5	611.9	1857.2	1873.6
11:35	12:25	217.7	1264.6	1283.2	217.9	7:50	4:10	1774.0	587.4	1868.7	1901.6
11:30	12:30	261.1	1261.3	1288.0	261.3	7:45	4:15	1793.7	562.7	1879.9	1929.0
11:25	12:35	304.2	1257.4	1293.6	304.6	7:40	4:20	1812.6	537.6	1890.7	1955.8
11:20	12:40	347.3	1252.8	1300.1	347.8	7:35	4:25	1830.6	512.4	1901.0	1982.0
11:15	12:45	390.2	1247.7	1307.3	390.9	7:30	4:30	1847.8	486.8	1910.8	2007.7
11:10	12:50	432.9	1242.0	1315.3	433.9	7:25	4:35	1864.0	461.1	1920.2	2032.8
11:05	12:55	475.4	1235.7	1324.0	476.8	7:20	4:40	1879.4	435.1	1929.1	2057.4
11:00	1:00	517.6	1228.8	1333.4	519.4	7:15	4:45	1893.9	408.9	1937.5	2081.3
10:55	1:05	559.7	1221.3	1343.5	562.0	7:10	4:50	1907.4	382.5	1945.4	2104.7
10:50	1:10	601.4	1213.3	1354.2	604.3	7:05	4:55	1920.1	356.0	1952.8	2127.5
10:45	1:15	642.9	1204.6	1365.5	646.4	7:00	5:00	1931.9	329.3	1959.7	2149.7
10:40	1:20	684.0	1195.4	1377.3	688.3	6:55	5:05	1942.7	302.4	1966.1	2171.3
10:35	1:25	724.9	1185.7	1389.7	730.0	6:50	5:10	1952.6	275.3	1971.9	2192.3
10:30	1:30	765.4	1175.3	1402.6	771.5	6:45	5:15	1961.6	248.2	1977.2	2212.8
10:25	1:35	805.5	1164.4	1415.9	812.7	6:40	5:20	1969.6	220.9	1982.0	2232.6
10:20	1:40	845.2	1153.0	1429.6	853.6	6:35	5:25	1976.7	193.5	1986.2	2251.9
10:15	1:45	884.6	1141.0	1443.7	894.3	6:30	5:30	1982.9	166.0	1989.8	2270.5
10:10	1:50	923.5	1128.4	1458.1	934.6	6:25	5:35	1988.1	138.5	1992.9	2288.6
10:05	1:55	962.0	1115.3	1472.9	974.7	6:20	5:40	1992.4	110.9	1995.5	2306.1
10:00	2:00	1000.0	1101.7	1487.9	1014.4	6:15	5:45	1995.7	83.2	1997.5	2323.0
9:55	2:05	1037.5	1087.6	1503.1	1053.8	6:10	5:50	1998.1	55.5	1998.9	2339.4
9:50	2:10	1074.6	1072.9	1518.5	1092.9	6:05	5:55	1999.5	27.8	1999.7	2355.1
9:45	2:15	1111.1	1057.8	1534.1	1131.6	6:00	6:00	2000.0	0.0	2000.0	2370.3
9:40	2:20	1147.2	1042.1	1549.8	1170.0	5:55	6:05	1999.5	-27.8	1999.7	2384.9
9:35	2:25	1182.6	1025.9	1565.6	1208.0	5:50	6:10	1998.1	-55.5	1998.9	2399.0
9:30	2:30	1217.5	1009.3	1581.5	1245.6	5:45	6:15	1995.7	-83.2	1997.5	2412.4
9:25	2:35	1251.8	992.1	1597.3	1282.8	5:40	6:20	1992.4	-110.9	1995.5	2425.4
9:20	2:40	1285.6	974.5	1613.2	1319.6	5:35	6:25	1988.1	-138.5	1992.9	2437.7
9:15	2:45	1318.7	956.5	1629.0	1356.0	5:30	6:30	1982.9	-166.0	1989.8	2449.5
9:10	2:50	1351.2	937.9	1644.8	1391.9	5:25	6:35	1976.7	-193.5	1986.2	2460.8
9:05	2:55	1383.0	919.0	1660.5	1427.4	5:20	6:40	1969.6	-220.9	1982.0	2471.6
9:00	3:00	1414.2	899.6	1676.1	1462.5	5:15	6:45	1961.6	-248.2	1977.2	2481.8
8:55	3:05	1444.7	879.7	1691.5	1497.1	5:10	6:50	1952.6	-275.3	1971.9	2491.5
8:50	3:10	1474.6	859.5	1706.7	1531.2	5:05	6:55	1942.7	-302.4	1966.1	2500.6
8:45	3:15	1503.7	838.8	1721.8	1564.9	5:00	7:00	1931.9	-329.3	1959.7	2509.3
8:40	3:20	1532.1	817.7	1736.7	1598.1	4:55	7:05	1920.1	-356.0	1952.8	2517.5
8:35	3:25	1559.8	796.3	1751.3	1630.7	4:50	7:10	1907.4	-382.5	1945.4	2525.1
8:30	3:30	1586.7	774.4	1765.6	1662.9	4:45	7:15	1893.9	-408.9	1937.5	2532.3
8:25	3:35	1612.9	752.2	1779.7	1694.6	4:40	7:20	1879.4	-435.1	1929.1	2539.1
8:20	3:40	1638.3	729.7	1793.5	1725.8	4:35	7:25	1864.0	-461.1	1920.2	2545.3
8:15	3:45	1662.9	706.8	1806.9	1756.4	4:30	7:30	1847.8	-486.8	1910.8	2551.1

Analematic Sundial

Latitude: 39.5° N/S

Date Scale

Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1272.2 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-654.8	-642.4	-638.6	-621.6	-616.6	-595.5	-589.6	-564.4	-557.7	-529.3	-521.8
February	-473.6	-439.0	-430.0	-393.4	-384.2	-345.8	-335.9	-296.3	-286.3	-245.5	-235.0
March	-204.0	-162.2	-151.6	-109.3	-98.7	-56.0	-45.5	-2.7	7.8	50.4	60.9
April	124.2	165.7	176.1	216.9	227.1	267.1	276.8	315.9	325.5	363.1	372.2
May	417.0	451.3	459.5	491.3	499.1	528.4	535.3	562.0	568.4	591.8	597.0
June	626.0	641.1	644.6	655.7	658.3	665.3	666.2	668.8	669.1	664.3	666.5
July	658.3	647.8	644.6	630.4	626.3	607.9	602.9	581.0	575.2	550.1	543.5
August	500.8	469.8	461.8	428.6	420.2	385.1	375.9	339.3	330.0	291.9	282.1
September	223.2	182.9	172.8	131.8	121.5	80.1	69.8	28.0	17.5	-24.5	-35.0
October	-87.4	-129.3	-139.6	-181.3	-191.4	-232.6	-242.8	-283.0	-293.0	-332.3	-341.8
November	-398.2	-434.4	-443.1	-477.1	-485.4	-517.0	-524.5	-553.2	-559.9	-585.3	-591.5
December	-617.9	-635.8	-639.6	-652.5	-655.4	-663.7	-665.3	-668.8	-669.1	-667.5	-666.5

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	654.8	642.4	638.6	621.6	616.6	595.5	589.6	564.4	557.7	529.3	521.8
February	473.6	439.0	430.0	393.4	384.2	345.8	335.9	296.3	286.3	245.5	235.0
March	204.0	162.2	151.6	109.3	98.7	56.0	45.5	2.7	-7.8	-50.4	-60.9
April	-124.2	-165.7	-176.1	-216.9	-227.1	-267.1	-276.8	-315.9	-325.5	-363.1	-372.2
May	-417.0	-451.3	-459.5	-491.3	-499.1	-528.4	-535.3	-562.0	-568.4	-591.8	-597.0
June	-626.0	-641.1	-644.6	-655.7	-658.3	-665.3	-666.2	-668.8	-669.1	-664.3	-666.5
July	-658.3	-647.8	-644.6	-630.4	-626.3	-607.9	-602.9	-581.0	-575.2	-550.1	-543.5
August	-500.8	-469.8	-461.8	-428.6	-420.2	-385.1	-375.9	-339.3	-330.0	-291.9	-282.1
September	-223.2	-182.9	-172.8	-131.8	-121.5	-80.1	-69.8	-28.0	-17.5	24.5	35.0
October	87.4	129.3	139.6	181.3	191.4	232.6	242.8	283.0	293.0	332.3	341.8
November	398.2	434.4	443.1	477.1	485.4	517.0	524.5	553.2	559.9	585.3	591.5
December	617.9	635.8	639.6	652.5	655.4	663.7	665.3	668.8	669.1	667.5	666.5

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: 39.5° N/S

Earliest Sunrise: 4:31 a.m. Latest Sunset: 7:29 p.m.
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 1590.2 mm
 Sunrise/Sunset Markers: X = ± 1418.4 mm

Local Time	X	Y	Z	W	Local Time	X	Y	Z	W		
12:00	0.0	1590.2	1590.2	0.0							
11:55	12:05	54.5	1589.8	1590.8	54.5	8:10	3:50	2108.5	854.4	2275.0	2233.2
11:50	12:10	109.0	1588.7	1592.4	109.1	8:05	3:55	2137.3	825.0	2291.0	2270.1
11:45	12:15	163.5	1586.8	1595.2	163.5	8:00	4:00	2165.1	795.1	2306.4	2306.4
11:40	12:20	217.9	1584.1	1599.1	218.0	7:55	4:05	2191.8	764.9	2321.4	2342.1
11:35	12:25	272.2	1580.7	1604.0	272.3	7:50	4:10	2217.5	734.3	2335.9	2377.0
11:30	12:30	326.3	1576.6	1610.0	326.6	7:45	4:15	2242.2	703.3	2349.9	2411.2
11:25	12:35	380.3	1571.7	1617.0	380.8	7:40	4:20	2265.8	672.0	2363.3	2444.7
11:20	12:40	434.1	1566.0	1625.1	434.8	7:35	4:25	2288.3	640.4	2376.2	2477.5
11:15	12:45	487.7	1559.6	1634.1	488.7	7:30	4:30	2309.7	608.5	2388.5	2509.7
11:10	12:50	541.1	1552.5	1644.1	542.4	7:25	4:35	2330.0	576.3	2400.2	2541.0
11:05	12:55	594.2	1544.6	1655.0	596.0	7:20	4:40	2349.2	543.9	2411.4	2571.7
11:00	1:00	647.0	1536.0	1666.7	649.3	7:15	4:45	2367.3	511.2	2421.9	2601.6
10:55	1:05	699.6	1526.7	1679.3	702.5	7:10	4:50	2384.3	478.2	2431.8	2630.9
10:50	1:10	751.8	1516.6	1692.7	755.4	7:05	4:55	2400.1	445.0	2441.0	2659.3
10:45	1:15	803.6	1505.8	1706.8	808.0	7:00	5:00	2414.8	411.6	2449.6	2687.1
10:40	1:20	855.1	1494.3	1721.6	860.4	6:55	5:05	2428.4	378.0	2457.6	2714.1
10:35	1:25	906.1	1482.1	1737.1	912.5	6:50	5:10	2440.7	344.2	2464.9	2740.4
10:30	1:30	956.7	1469.1	1753.2	964.3	6:45	5:15	2452.0	310.2	2471.5	2765.9
10:25	1:35	1006.9	1455.5	1769.8	1015.8	6:40	5:20	2462.0	276.1	2477.5	2790.8
10:20	1:40	1056.5	1441.2	1787.0	1067.0	6:35	5:25	2470.9	241.9	2482.7	2814.8
10:15	1:45	1105.7	1426.2	1804.6	1117.8	6:30	5:30	2478.6	207.6	2487.3	2838.2
10:10	1:50	1154.4	1410.5	1822.7	1168.3	6:25	5:35	2485.1	173.1	2491.2	2860.8
10:05	1:55	1202.5	1394.2	1841.1	1218.3	6:20	5:40	2490.5	138.6	2494.3	2882.6
10:00	2:00	1250.0	1377.1	1859.8	1268.0	6:15	5:45	2494.6	104.0	2496.8	2903.8
9:55	2:05	1296.9	1359.5	1878.9	1317.3	6:10	5:50	2497.6	69.4	2498.6	2924.2
9:50	2:10	1343.2	1341.2	1898.2	1366.1	6:05	5:55	2499.4	34.7	2499.6	2943.9
9:45	2:15	1388.9	1322.2	1917.6	1414.5	6:00	6:00	2500.0	0.0	2500.0	2962.9
9:40	2:20	1433.9	1302.6	1937.3	1462.5	5:55	6:05	2499.4	-34.7	2499.6	2981.2
9:35	2:25	1478.3	1282.4	1957.0	1510.0	5:50	6:10	2497.6	-69.4	2498.6	2998.7
9:30	2:30	1521.9	1261.6	1976.8	1557.0	5:45	6:15	2494.6	-104.0	2496.8	3015.6
9:25	2:35	1564.8	1240.2	1996.7	1603.5	5:40	6:20	2490.5	-138.6	2494.3	3031.7
9:20	2:40	1607.0	1218.2	2016.5	1649.5	5:35	6:25	2485.1	-173.1	2491.2	3047.2
9:15	2:45	1648.4	1195.6	2036.3	1694.9	5:30	6:30	2478.6	-207.6	2487.3	3061.9
9:10	2:50	1689.0	1172.4	2056.0	1739.9	5:25	6:35	2470.9	-241.9	2482.7	3076.0
9:05	2:55	1728.8	1148.7	2075.6	1784.3	5:20	6:40	2462.0	-276.1	2477.5	3089.5
9:00	3:00	1767.8	1124.4	2095.1	1828.1	5:15	6:45	2452.0	-310.2	2471.5	3102.2
8:55	3:05	1805.9	1099.6	2114.4	1871.4	5:10	6:50	2440.7	-344.2	2464.9	3114.3
8:50	3:10	1843.2	1074.3	2133.4	1914.0	5:05	6:55	2428.4	-378.0	2457.6	3125.8
8:45	3:15	1879.6	1048.5	2152.3	1956.1	5:00	7:00	2414.8	-411.6	2449.6	3136.6
8:40	3:20	1915.1	1022.2	2170.8	1997.6	4:55	7:05	2400.1	-445.0	2441.0	3146.8
8:35	3:25	1949.7	995.3	2189.1	2038.4	4:50	7:10	2384.3	-478.2	2431.8	3156.4
8:30	3:30	1983.4	968.0	2207.0	2078.7	4:45	7:15	2367.3	-511.2	2421.9	3165.4
8:25	3:35	2016.1	940.3	2224.6	2118.3	4:40	7:20	2349.2	-543.9	2411.4	3173.8
8:20	3:40	2047.9	912.1	2241.8	2157.2	4:35	7:25	2330.0	-576.3	2400.2	3181.7
8:15	3:45	2078.7	883.5	2258.6	2195.5	4:30	7:30	2309.7	-608.5	2388.5	3188.9

Analematic Sundial

Latitude: 39.5° N/S

Date Scale

Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 1590.2 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-818.4	-803.0	-798.3	-777.0	-770.8	-744.4	-737.0	-705.6	-697.2	-661.6	-652.2
February	-592.0	-548.8	-537.5	-491.7	-480.3	-432.3	-419.9	-370.4	-357.9	-306.9	-293.8
March	-255.0	-202.8	-189.5	-136.6	-123.4	-70.1	-56.9	-3.4	9.8	63.0	76.1
April	155.2	207.2	220.1	271.1	283.8	333.9	346.1	394.9	406.9	453.9	465.3
May	521.2	564.1	574.3	614.2	623.8	660.5	669.1	702.5	710.5	739.7	746.3
June	782.5	801.4	805.8	819.6	822.8	831.6	832.8	836.0	836.4	830.4	833.2
July	822.8	809.7	805.8	788.0	782.9	759.9	753.7	726.2	718.9	687.7	679.3
August	626.0	587.2	577.3	535.7	525.2	481.3	469.9	424.1	412.5	364.8	352.7
September	279.0	228.7	216.0	164.7	151.8	100.1	87.3	35.0	21.9	-30.6	-43.8
October	-109.2	-161.6	-174.5	-226.6	-239.3	-290.7	-303.5	-353.7	-366.2	-415.3	-427.3
November	-497.8	-543.0	-553.9	-596.4	-606.8	-646.2	-655.6	-691.5	-699.8	-731.6	-739.3
December	-772.4	-794.7	-799.4	-815.7	-819.2	-829.6	-831.6	-836.0	-836.4	-834.4	-833.2

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	818.4	803.0	798.3	777.0	770.8	744.4	737.0	705.6	697.2	661.6	652.2
February	592.0	548.8	537.5	491.7	480.3	432.3	419.9	370.4	357.9	306.9	293.8
March	255.0	202.8	189.5	136.6	123.4	70.1	56.9	3.4	-9.8	-63.0	-76.1
April	-155.2	-207.2	-220.1	-271.1	-283.8	-333.9	-346.1	-394.9	-406.9	-453.9	-465.3
May	-521.2	-564.1	-574.3	-614.2	-623.8	-660.5	-669.1	-702.5	-710.5	-739.7	-746.3
June	-782.5	-801.4	-805.8	-819.6	-822.8	-831.6	-832.8	-836.0	-836.4	-830.4	-833.2
July	-822.8	-809.7	-805.8	-788.0	-782.9	-759.9	-753.7	-726.2	-718.9	-687.7	-679.3
August	-626.0	-587.2	-577.3	-535.7	-525.2	-481.3	-469.9	-424.1	-412.5	-364.8	-352.7
September	-279.0	-228.7	-216.0	-164.7	-151.8	-100.1	-87.3	-35.0	-21.9	30.6	43.8
October	109.2	161.6	174.5	226.6	239.3	290.7	303.5	353.7	366.2	415.3	427.3
November	497.8	543.0	553.9	596.4	606.8	646.2	655.6	691.5	699.8	731.6	739.3
December	772.4	794.7	799.4	815.7	819.2	829.6	831.6	836.0	836.4	834.4	833.2

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 |