

## Analemmatic Sundial

Latitude: 62.5° N/S

Earliest Sunrise: 2:00 a.m.    Latest Sunset: 10:00 p.m.  
 Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 887.0 mm  
 Sunrise/Sunset Markers: X = ± 150.8 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	887.0	887.0	0.0						
11:55	12:05	21.8	886.8	887.1	21.8	8:25	3:35	806.4	524.5	962.0	884.2
11:50	12:10	43.6	886.2	887.2	43.6	8:20	3:40	819.2	508.8	964.3	902.3
11:45	12:15	65.4	885.1	887.5	65.4	8:15	3:45	831.5	492.8	966.5	920.2
11:40	12:20	87.2	883.6	887.9	87.2	8:10	3:50	843.4	476.6	968.7	938.0
11:35	12:25	108.9	881.7	888.4	109.0	8:05	3:55	854.9	460.2	970.9	955.6
11:30	12:30	130.5	879.4	889.1	130.7	8:00	4:00	866.0	443.5	973.0	973.0
11:25	12:35	152.1	876.7	889.8	152.5	7:55	4:05	876.7	426.6	975.0	990.2
11:20	12:40	173.6	873.5	890.6	174.2	7:50	4:10	887.0	409.6	977.0	1007.3
11:15	12:45	195.1	870.0	891.6	195.8	7:45	4:15	896.9	392.3	978.9	1024.3
11:10	12:50	216.4	866.0	892.6	217.5	7:40	4:20	906.3	374.9	980.8	1041.0
11:05	12:55	237.7	861.6	893.8	239.0	7:35	4:25	915.3	357.2	982.6	1057.6
11:00	1:00	258.8	856.8	895.0	260.6	7:30	4:30	923.9	339.4	984.3	1074.0
10:55	1:05	279.8	851.6	896.4	282.1	7:25	4:35	932.0	321.5	985.9	1090.2
10:50	1:10	300.7	846.0	897.8	303.5	7:20	4:40	939.7	303.4	987.5	1106.2
10:45	1:15	321.4	839.9	899.3	324.9	7:15	4:45	946.9	285.1	988.9	1122.0
10:40	1:20	342.0	833.5	901.0	346.2	7:10	4:50	953.7	266.7	990.3	1137.7
10:35	1:25	362.4	826.7	902.7	367.4	7:05	4:55	960.0	248.2	991.6	1153.2
10:30	1:30	382.7	819.5	904.4	388.6	7:00	5:00	965.9	229.6	992.8	1168.4
10:25	1:35	402.7	811.9	906.3	409.7	6:55	5:05	971.3	210.8	994.0	1183.5
10:20	1:40	422.6	803.9	908.2	430.7	6:50	5:10	976.3	192.0	995.0	1198.4
10:15	1:45	442.3	795.5	910.2	451.6	6:45	5:15	980.8	173.0	995.9	1213.1
10:10	1:50	461.7	786.8	912.3	472.5	6:40	5:20	984.8	154.0	996.8	1227.6
10:05	1:55	481.0	777.7	914.4	493.3	6:35	5:25	988.4	134.9	997.5	1242.0
10:00	2:00	500.0	768.2	916.6	513.9	6:30	5:30	991.4	115.8	998.2	1256.1
9:55	2:05	518.8	758.3	918.8	534.5	6:25	5:35	994.1	96.6	998.7	1270.0
9:50	2:10	537.3	748.1	921.1	555.0	6:20	5:40	996.2	77.3	999.2	1283.8
9:45	2:15	555.6	737.5	923.4	575.3	6:15	5:45	997.9	58.0	999.5	1297.3
9:40	2:20	573.6	726.6	925.7	595.6	6:10	5:50	999.0	38.7	999.8	1310.6
9:35	2:25	591.3	715.3	928.1	615.7	6:05	5:55	999.8	19.4	999.9	1323.8
9:30	2:30	608.8	703.7	930.5	635.8	6:00	6:00	1000.0	0.0	1000.0	1336.7
9:25	2:35	625.9	691.8	932.9	655.7	5:55	6:05	999.8	-19.4	999.9	1349.4
9:20	2:40	642.8	679.5	935.4	675.5	5:50	6:10	999.0	-38.7	999.8	1362.0
9:15	2:45	659.3	666.9	937.8	695.1	5:45	6:15	997.9	-58.0	999.5	1374.3
9:10	2:50	675.6	654.0	940.3	714.7	5:40	6:20	996.2	-77.3	999.2	1386.5
9:05	2:55	691.5	640.7	942.7	734.1	5:35	6:25	994.1	-96.6	998.7	1398.4
9:00	3:00	707.1	627.2	945.2	753.3	5:30	6:30	991.4	-115.8	998.2	1410.2
8:55	3:05	722.4	613.4	947.7	772.5	5:25	6:35	988.4	-134.9	997.5	1421.7
8:50	3:10	737.3	599.3	950.1	791.4	5:20	6:40	984.8	-154.0	996.8	1433.0
8:45	3:15	751.8	584.8	952.5	810.3	5:15	6:45	980.8	-173.0	995.9	1444.2
8:40	3:20	766.0	570.2	954.9	829.0	5:10	6:50	976.3	-192.0	995.0	1455.1
8:35	3:25	779.9	555.2	957.3	847.5	5:05	6:55	971.3	-210.8	994.0	1465.9
8:30	3:30	793.4	540.0	959.7	865.9	5:00	7:00	965.9	-229.6	992.8	1476.4

## Analemmatic Sundial

Latitude: 62.5° N/S

Earliest Sunrise: 2:00 a.m.    Latest Sunset: 10:00 p.m.  
 Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 887.0 mm  
 Sunrise/Sunset Markers: X = ± 150.8 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
4:55	7:05	960.0	-248.2	991.6	1486.7	2:55	9:05	691.5	-640.7	942.7	1677.0
4:50	7:10	953.7	-266.7	990.3	1496.9	2:50	9:10	675.6	-654.0	940.3	1682.6
4:45	7:15	946.9	-285.1	988.9	1506.8	2:45	9:15	659.3	-666.9	937.8	1688.0
4:40	7:20	939.7	-303.4	987.5	1516.6	2:40	9:20	642.8	-679.5	935.4	1693.3
4:35	7:25	932.0	-321.5	985.9	1526.1	2:35	9:25	625.9	-691.8	932.9	1698.3
4:30	7:30	923.9	-339.4	984.3	1535.5	2:30	9:30	608.8	-703.7	930.5	1703.2
4:25	7:35	915.3	-357.2	982.6	1544.7	2:25	9:35	591.3	-715.3	928.1	1708.0
4:20	7:40	906.3	-374.9	980.8	1553.6	2:20	9:40	573.6	-726.6	925.7	1712.5
4:15	7:45	896.9	-392.3	978.9	1562.4	2:15	9:45	555.6	-737.5	923.4	1716.9
4:10	7:50	887.0	-409.6	977.0	1571.0	2:10	9:50	537.3	-748.1	921.1	1721.1
4:05	7:55	876.7	-426.6	975.0	1579.3	2:05	9:55	518.8	-758.3	918.8	1725.2
4:00	8:00	866.0	-443.5	973.0	1587.5	2:00	10:00	500.0	-768.2	916.6	1729.1
3:55	8:05	854.9	-460.2	970.9	1595.5						
3:50	8:10	843.4	-476.6	968.7	1603.3						
3:45	8:15	831.5	-492.8	966.5	1611.0						
3:40	8:20	819.2	-508.8	964.3	1618.4						
3:35	8:25	806.4	-524.5	962.0	1625.6						
3:30	8:30	793.4	-540.0	959.7	1632.7						
3:25	8:35	779.9	-555.2	957.3	1639.6						
3:20	8:40	766.0	-570.2	954.9	1646.3						
3:15	8:45	751.8	-584.8	952.5	1652.8						
3:10	8:50	737.3	-599.3	950.1	1659.1						
3:05	8:55	722.4	-613.4	947.7	1665.2						
3:00	9:00	707.1	-627.2	945.2	1671.2						

## Analemmatic Sundial

Latitude: 62.5° N/S

## Date Scale

Semi-Major Axis (E-W): 1000 mm    Semi-Minor Axis (N-S): 887.0 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-195.9	-192.2	-191.1	-186.0	-184.5	-178.2	-176.4	-168.9	-166.9	-158.4	-156.1
February	-141.7	-131.4	-128.7	-117.7	-115.0	-103.5	-100.5	-88.7	-85.7	-73.5	-70.3
March	-61.0	-48.5	-45.4	-32.7	-29.5	-16.8	-13.6	-0.8	2.3	15.1	18.2
April	37.2	49.6	52.7	64.9	67.9	79.9	82.8	94.5	97.4	108.6	111.4
May	124.8	135.0	137.5	147.0	149.3	158.1	160.2	168.2	170.1	177.1	178.6
June	187.3	191.8	192.9	196.2	197.0	199.1	199.3	200.1	200.2	198.8	199.4
July	197.0	193.8	192.9	188.6	187.4	181.9	180.4	173.8	172.1	164.6	162.6
August	149.9	140.6	138.2	128.2	125.7	115.2	112.5	101.5	98.7	87.3	84.4
September	66.8	54.7	51.7	39.4	36.3	24.0	20.9	8.4	5.2	-7.3	-10.5
October	-26.1	-38.7	-41.8	-54.2	-57.3	-69.6	-72.6	-84.7	-87.7	-99.4	-102.3
November	-119.2	-130.0	-132.6	-142.8	-145.2	-154.7	-156.9	-165.5	-167.5	-175.1	-177.0
December	-184.9	-190.2	-191.4	-195.2	-196.1	-198.6	-199.1	-200.1	-200.2	-199.7	-199.4

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	195.9	192.2	191.1	186.0	184.5	178.2	176.4	168.9	166.9	158.4	156.1
February	141.7	131.4	128.7	117.7	115.0	103.5	100.5	88.7	85.7	73.5	70.3
March	61.0	48.5	45.4	32.7	29.5	16.8	13.6	0.8	-2.3	-15.1	-18.2
April	-37.2	-49.6	-52.7	-64.9	-67.9	-79.9	-82.8	-94.5	-97.4	-108.6	-111.4
May	-124.8	-135.0	-137.5	-147.0	-149.3	-158.1	-160.2	-168.2	-170.1	-177.1	-178.6
June	-187.3	-191.8	-192.9	-196.2	-197.0	-199.1	-199.3	-200.1	-200.2	-198.8	-199.4
July	-197.0	-193.8	-192.9	-188.6	-187.4	-181.9	-180.4	-173.8	-172.1	-164.6	-162.6
August	-149.9	-140.6	-138.2	-128.2	-125.7	-115.2	-112.5	-101.5	-98.7	-87.3	-84.4
September	-66.8	-54.7	-51.7	-39.4	-36.3	-24.0	-20.9	-8.4	-5.2	7.3	10.5
October	26.1	38.7	41.8	54.2	57.3	69.6	72.6	84.7	87.7	99.4	102.3
November	119.2	130.0	132.6	142.8	145.2	154.7	156.9	165.5	167.5	175.1	177.0
December	184.9	190.2	191.4	195.2	196.1	198.6	199.1	200.1	200.2	199.7	199.4

Southern Hemisphere

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

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

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

## Analemmatic Sundial

Latitude: 62.5° N/S

Earliest Sunrise: 2:00 a.m.    Latest Sunset: 10:00 p.m.  
 Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 1330.5 mm  
 Sunrise/Sunset Markers: X = ± 226.2 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1330.5	1330.5	0.0						
11:55	12:05	32.7	1330.2	1330.6	32.7	8:25	3:35	1209.7	786.7	1443.0	1326.3
11:50	12:10	65.4	1329.2	1330.9	65.4	8:20	3:40	1228.7	763.2	1446.4	1353.4
11:45	12:15	98.1	1327.7	1331.3	98.1	8:15	3:45	1247.2	739.2	1449.8	1380.3
11:40	12:20	130.7	1325.5	1331.9	130.8	8:10	3:50	1265.1	714.9	1453.1	1406.9
11:35	12:25	163.3	1322.6	1332.7	163.5	8:05	3:55	1282.4	690.2	1456.3	1433.3
11:30	12:30	195.8	1319.1	1333.6	196.1	8:00	4:00	1299.0	665.3	1459.5	1459.5
11:25	12:35	228.2	1315.0	1334.7	228.7	7:55	4:05	1315.1	640.0	1462.5	1485.4
11:20	12:40	260.5	1310.3	1335.9	261.3	7:50	4:10	1330.5	614.4	1465.5	1511.0
11:15	12:45	292.6	1305.0	1337.4	293.8	7:45	4:15	1345.3	588.5	1468.4	1536.4
11:10	12:50	324.7	1299.0	1338.9	326.2	7:40	4:20	1359.5	562.3	1471.2	1561.5
11:05	12:55	356.5	1292.4	1340.7	358.6	7:35	4:25	1373.0	535.9	1473.8	1586.4
11:00	1:00	388.2	1285.2	1342.5	390.9	7:30	4:30	1385.8	509.2	1476.4	1610.9
10:55	1:05	419.7	1277.4	1344.6	423.1	7:25	4:35	1398.0	482.2	1478.8	1635.2
10:50	1:10	451.1	1268.9	1346.7	455.2	7:20	4:40	1409.5	455.1	1481.2	1659.3
10:45	1:15	482.2	1259.9	1349.0	487.3	7:15	4:45	1420.4	427.7	1483.4	1683.0
10:40	1:20	513.0	1250.3	1351.4	519.3	7:10	4:50	1430.6	400.1	1485.5	1706.5
10:35	1:25	543.7	1240.1	1354.0	551.1	7:05	4:55	1440.1	372.3	1487.4	1729.7
10:30	1:30	574.0	1229.2	1356.7	582.9	7:00	5:00	1448.9	344.4	1489.2	1752.6
10:25	1:35	604.1	1217.8	1359.4	614.5	6:55	5:05	1457.0	316.2	1490.9	1775.3
10:20	1:40	633.9	1205.9	1362.3	646.1	6:50	5:10	1464.4	288.0	1492.5	1797.6
10:15	1:45	663.4	1193.3	1365.3	677.5	6:45	5:15	1471.2	259.6	1493.9	1819.7
10:10	1:50	692.6	1180.2	1368.4	708.8	6:40	5:20	1477.2	231.0	1495.2	1841.5
10:05	1:55	721.5	1166.5	1371.6	739.9	6:35	5:25	1482.5	202.4	1496.3	1862.9
10:00	2:00	750.0	1152.3	1374.8	770.9	6:30	5:30	1487.2	173.7	1497.3	1884.1
9:55	2:05	778.2	1137.5	1378.2	801.7	6:25	5:35	1491.1	144.8	1498.1	1905.0
9:50	2:10	805.9	1122.1	1381.6	832.4	6:20	5:40	1494.3	116.0	1498.8	1925.6
9:45	2:15	833.4	1106.3	1385.0	863.0	6:15	5:45	1496.8	87.0	1499.3	1945.9
9:40	2:20	860.4	1089.9	1388.6	893.4	6:10	5:50	1498.6	58.0	1499.7	1965.9
9:35	2:25	887.0	1073.0	1392.1	923.6	6:05	5:55	1499.6	29.0	1499.9	1985.7
9:30	2:30	913.1	1055.6	1395.7	953.6	6:00	6:00	1500.0	0.0	1500.0	2005.1
9:25	2:35	938.9	1037.6	1399.4	983.5	5:55	6:05	1499.6	-29.0	1499.9	2024.2
9:20	2:40	964.2	1019.2	1403.0	1013.2	5:50	6:10	1498.6	-58.0	1499.7	2043.0
9:15	2:45	989.0	1000.3	1406.7	1042.7	5:45	6:15	1496.8	-87.0	1499.3	2061.5
9:10	2:50	1013.4	981.0	1410.4	1072.0	5:40	6:20	1494.3	-116.0	1498.8	2079.7
9:05	2:55	1037.3	961.1	1414.1	1101.1	5:35	6:25	1491.1	-144.8	1498.1	2097.6
9:00	3:00	1060.7	940.8	1417.8	1130.0	5:30	6:30	1487.2	-173.7	1497.3	2115.2
8:55	3:05	1083.5	920.1	1421.5	1158.7	5:25	6:35	1482.5	-202.4	1496.3	2132.6
8:50	3:10	1105.9	898.9	1425.1	1187.2	5:20	6:40	1477.2	-231.0	1495.2	2149.6
8:45	3:15	1127.8	877.3	1428.8	1215.4	5:15	6:45	1471.2	-259.6	1493.9	2166.3
8:40	3:20	1149.1	855.2	1432.4	1243.5	5:10	6:50	1464.4	-288.0	1492.5	2182.7
8:35	3:25	1169.8	832.8	1436.0	1271.3	5:05	6:55	1457.0	-316.2	1490.9	2198.8
8:30	3:30	1190.0	810.0	1439.5	1298.9	5:00	7:00	1448.9	-344.4	1489.2	2214.6

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 Sunrise/Sunset Markers: X = ± 226.2 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
4:55	7:05	1440.1	-372.3	1487.4	2230.1	2:55	9:05	1037.3	-961.1	1414.1	2515.5
4:50	7:10	1430.6	-400.1	1485.5	2245.3	2:50	9:10	1013.4	-981.0	1410.4	2523.9
4:45	7:15	1420.4	-427.7	1483.4	2260.3	2:45	9:15	989.0	-1000.3	1406.7	2532.0
4:40	7:20	1409.5	-455.1	1481.2	2274.9	2:40	9:20	964.2	-1019.2	1403.0	2539.9
4:35	7:25	1398.0	-482.2	1478.8	2289.2	2:35	9:25	938.9	-1037.6	1399.4	2547.5
4:30	7:30	1385.8	-509.2	1476.4	2303.2	2:30	9:30	913.1	-1055.6	1395.7	2554.8
4:25	7:35	1373.0	-535.9	1473.8	2317.0	2:25	9:35	887.0	-1073.0	1392.1	2561.9
4:20	7:40	1359.5	-562.3	1471.2	2330.4	2:20	9:40	860.4	-1089.9	1388.6	2568.8
4:15	7:45	1345.3	-588.5	1468.4	2343.6	2:15	9:45	833.4	-1106.3	1385.0	2575.4
4:10	7:50	1330.5	-614.4	1465.5	2356.4	2:10	9:50	805.9	-1122.1	1381.6	2581.7
4:05	7:55	1315.1	-640.0	1462.5	2369.0	2:05	9:55	778.2	-1137.5	1378.2	2587.8
4:00	8:00	1299.0	-665.3	1459.5	2381.3	2:00	10:00	750.0	-1152.3	1374.8	2593.6
3:55	8:05	1282.4	-690.2	1456.3	2393.3						
3:50	8:10	1265.1	-714.9	1453.1	2405.0						
3:45	8:15	1247.2	-739.2	1449.8	2416.4						
3:40	8:20	1228.7	-763.2	1446.4	2427.6						
3:35	8:25	1209.7	-786.7	1443.0	2438.5						
3:30	8:30	1190.0	-810.0	1439.5	2449.0						
3:25	8:35	1169.8	-832.8	1436.0	2459.4						
3:20	8:40	1149.1	-855.2	1432.4	2469.4						
3:15	8:45	1127.8	-877.3	1428.8	2479.1						
3:10	8:50	1105.9	-898.9	1425.1	2488.6						
3:05	8:55	1083.5	-920.1	1421.5	2497.8						
3:00	9:00	1060.7	-940.8	1417.8	2506.8						

## Analematic Sundial

Latitude: 62.5° N/S

## Date Scale

Semi-Major Axis (E-W): 1500 mm    Semi-Minor Axis (N-S): 1330.5 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-293.9	-288.3	-286.6	-279.0	-276.7	-267.3	-264.6	-253.3	-250.3	-237.5	-234.2
February	-212.5	-197.0	-193.0	-176.5	-172.4	-155.2	-150.8	-133.0	-128.5	-110.2	-105.5
March	-91.6	-72.8	-68.0	-49.0	-44.3	-25.2	-20.4	-1.2	3.5	22.6	27.3
April	55.7	74.4	79.0	97.3	101.9	119.9	124.2	141.8	146.1	163.0	167.1
May	187.1	202.5	206.2	220.5	224.0	237.1	240.2	252.2	255.1	265.6	268.0
June	281.0	287.7	289.3	294.3	295.4	298.6	299.0	300.2	300.3	298.1	299.2
July	295.4	290.7	289.3	282.9	281.1	272.8	270.6	260.8	258.1	246.9	243.9
August	224.8	210.8	207.3	192.3	188.6	172.8	168.7	152.3	148.1	131.0	126.6
September	100.2	82.1	77.6	59.1	54.5	35.9	31.3	12.6	7.9	-11.0	-15.7
October	-39.2	-58.0	-62.7	-81.4	-85.9	-104.4	-109.0	-127.0	-131.5	-149.1	-153.4
November	-178.7	-194.9	-198.9	-214.1	-217.9	-232.0	-235.4	-248.3	-251.3	-262.7	-265.5
December	-277.3	-285.3	-287.0	-292.9	-294.1	-297.9	-298.6	-300.2	-300.3	-299.6	-299.2

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	293.9	288.3	286.6	279.0	276.7	267.3	264.6	253.3	250.3	237.5	234.2
February	212.5	197.0	193.0	176.5	172.4	155.2	150.8	133.0	128.5	110.2	105.5
March	91.6	72.8	68.0	49.0	44.3	25.2	20.4	1.2	-3.5	-22.6	-27.3
April	-55.7	-74.4	-79.0	-97.3	-101.9	-119.9	-124.2	-141.8	-146.1	-163.0	-167.1
May	-187.1	-202.5	-206.2	-220.5	-224.0	-237.1	-240.2	-252.2	-255.1	-265.6	-268.0
June	-281.0	-287.7	-289.3	-294.3	-295.4	-298.6	-299.0	-300.2	-300.3	-298.1	-299.2
July	-295.4	-290.7	-289.3	-282.9	-281.1	-272.8	-270.6	-260.8	-258.1	-246.9	-243.9
August	-224.8	-210.8	-207.3	-192.3	-188.6	-172.8	-168.7	-152.3	-148.1	-131.0	-126.6
September	-100.2	-82.1	-77.6	-59.1	-54.5	-35.9	-31.3	-12.6	-7.9	11.0	15.7
October	39.2	58.0	62.7	81.4	85.9	104.4	109.0	127.0	131.5	149.1	153.4
November	178.7	194.9	198.9	214.1	217.9	232.0	235.4	248.3	251.3	262.7	265.5
December	277.3	285.3	287.0	292.9	294.1	297.9	298.6	300.2	300.3	299.6	299.2

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: 62.5° N/S

Earliest Sunrise: 2:00 a.m.    Latest Sunset: 10:00 p.m.  
 Semi-Major Axis (E-W): 2000 mm    Semi-Minor Axis (N-S): 1774.0 mm  
 Sunrise/Sunset Markers: X = ± 301.7 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	1774.0	1774.0	0.0						
11:55	12:05	43.6	1773.6	1774.1	43.6	8:25	3:35	1612.9	1049.0	1924.0	1768.4
11:50	12:10	87.2	1772.3	1774.5	87.3	8:20	3:40	1638.3	1017.5	1928.6	1804.5
11:45	12:15	130.8	1770.2	1775.0	130.9	8:15	3:45	1662.9	985.6	1933.1	1840.4
11:40	12:20	174.3	1767.3	1775.8	174.4	8:10	3:50	1686.8	953.2	1937.5	1875.9
11:35	12:25	217.7	1763.5	1776.9	218.0	8:05	3:55	1709.8	920.3	1941.8	1911.1
11:30	12:30	261.1	1758.8	1778.1	261.5	8:00	4:00	1732.1	887.0	1946.0	1946.0
11:25	12:35	304.2	1753.4	1779.6	304.9	7:55	4:05	1753.5	853.3	1950.0	1980.5
11:20	12:40	347.3	1747.1	1781.3	348.3	7:50	4:10	1774.0	819.2	1954.0	2014.7
11:15	12:45	390.2	1739.9	1783.1	391.7	7:45	4:15	1793.7	784.6	1957.8	2048.5
11:10	12:50	432.9	1732.0	1785.2	434.9	7:40	4:20	1812.6	749.7	1961.5	2082.0
11:05	12:55	475.4	1723.2	1787.5	478.1	7:35	4:25	1830.6	714.5	1965.1	2115.1
11:00	1:00	517.6	1713.6	1790.1	521.2	7:30	4:30	1847.8	678.9	1968.5	2147.9
10:55	1:05	559.7	1703.1	1792.7	564.1	7:25	4:35	1864.0	643.0	1971.8	2180.3
10:50	1:10	601.4	1691.9	1795.6	607.0	7:20	4:40	1879.4	606.8	1974.9	2212.4
10:45	1:15	642.9	1679.9	1798.7	649.7	7:15	4:45	1893.9	570.2	1977.8	2244.1
10:40	1:20	684.0	1667.0	1801.9	692.4	7:10	4:50	1907.4	533.5	1980.6	2275.4
10:35	1:25	724.9	1653.4	1805.3	734.8	7:05	4:55	1920.1	496.4	1983.2	2306.3
10:30	1:30	765.4	1639.0	1808.9	777.2	7:00	5:00	1931.9	459.2	1985.7	2336.9
10:25	1:35	805.5	1623.8	1812.6	819.4	6:55	5:05	1942.7	421.7	1987.9	2367.0
10:20	1:40	845.2	1607.8	1816.4	861.4	6:50	5:10	1952.6	384.0	1990.0	2396.8
10:15	1:45	884.6	1591.1	1820.4	903.3	6:45	5:15	1961.6	346.1	1991.9	2426.3
10:10	1:50	923.5	1573.6	1824.6	945.0	6:40	5:20	1969.6	308.1	1993.6	2455.3
10:05	1:55	962.0	1555.3	1828.8	986.5	6:35	5:25	1976.7	269.9	1995.1	2483.9
10:00	2:00	1000.0	1536.3	1833.1	1027.9	6:30	5:30	1982.9	231.6	1996.4	2512.2
9:55	2:05	1037.5	1516.6	1837.6	1069.0	6:25	5:35	1988.1	193.1	1997.5	2540.0
9:50	2:10	1074.6	1496.2	1842.1	1109.9	6:20	5:40	1992.4	154.6	1998.4	2567.5
9:45	2:15	1111.1	1475.0	1846.7	1150.7	6:15	5:45	1995.7	116.0	1999.1	2594.6
9:40	2:20	1147.2	1453.2	1851.4	1191.2	6:10	5:50	1998.1	77.4	1999.6	2621.3
9:35	2:25	1182.6	1430.7	1856.2	1231.5	6:05	5:55	1999.5	38.7	1999.9	2647.5
9:30	2:30	1217.5	1407.4	1861.0	1271.5	6:00	6:00	2000.0	0.0	2000.0	2673.4
9:25	2:35	1251.8	1383.5	1865.8	1311.3	5:55	6:05	1999.5	-38.7	1999.9	2698.9
9:20	2:40	1285.6	1359.0	1870.7	1350.9	5:50	6:10	1998.1	-77.4	1999.6	2724.0
9:15	2:45	1318.7	1333.8	1875.6	1390.2	5:45	6:15	1995.7	-116.0	1999.1	2748.7
9:10	2:50	1351.2	1307.9	1880.5	1429.3	5:40	6:20	1992.4	-154.6	1998.4	2773.0
9:05	2:55	1383.0	1281.5	1885.5	1468.1	5:35	6:25	1988.1	-193.1	1997.5	2796.8
9:00	3:00	1414.2	1254.4	1890.4	1506.6	5:30	6:30	1982.9	-231.6	1996.4	2820.3
8:55	3:05	1444.7	1226.8	1895.3	1544.9	5:25	6:35	1976.7	-269.9	1995.1	2843.4
8:50	3:10	1474.6	1198.5	1900.2	1582.9	5:20	6:40	1969.6	-308.1	1993.6	2866.1
8:45	3:15	1503.7	1169.7	1905.1	1620.6	5:15	6:45	1961.6	-346.1	1991.9	2888.4
8:40	3:20	1532.1	1140.3	1909.9	1658.0	5:10	6:50	1952.6	-384.0	1990.0	2910.2
8:35	3:25	1559.8	1110.4	1914.6	1695.1	5:05	6:55	1942.7	-421.7	1987.9	2931.7
8:30	3:30	1586.7	1080.0	1919.4	1731.9	5:00	7:00	1931.9	-459.2	1985.7	2952.8

Analemmatic Sundial

Latitude: 62.5° N/S

Earliest Sunrise: 2:00 a.m. Latest Sunset: 10:00 p.m.  
 Semi-Major Axis (E-W): 2000 mm Semi-Minor Axis (N-S): 1774.0 mm  
 Sunrise/Sunset Markers: X = ± 301.7 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
4:55	7:05	1920.1	-496.4	1983.2	2973.5	2:55	9:05	1383.0	-1281.5	1885.5	3353.9
4:50	7:10	1907.4	-533.5	1980.6	2993.8	2:50	9:10	1351.2	-1307.9	1880.5	3365.1
4:45	7:15	1893.9	-570.2	1977.8	3013.7	2:45	9:15	1318.7	-1333.8	1875.6	3376.0
4:40	7:20	1879.4	-606.8	1974.9	3033.2	2:40	9:20	1285.6	-1359.0	1870.7	3386.5
4:35	7:25	1864.0	-643.0	1971.8	3052.3	2:35	9:25	1251.8	-1383.5	1865.8	3396.7
4:30	7:30	1847.8	-678.9	1968.5	3071.0	2:30	9:30	1217.5	-1407.4	1861.0	3406.5
4:25	7:35	1830.6	-714.5	1965.1	3089.3	2:25	9:35	1182.6	-1430.7	1856.2	3415.9
4:20	7:40	1812.6	-749.7	1961.5	3107.2	2:20	9:40	1147.2	-1453.2	1851.4	3425.0
4:15	7:45	1793.7	-784.6	1957.8	3124.8	2:15	9:45	1111.1	-1475.0	1846.7	3433.8
4:10	7:50	1774.0	-819.2	1954.0	3141.9	2:10	9:50	1074.6	-1496.2	1842.1	3442.2
4:05	7:55	1753.5	-853.3	1950.0	3158.7	2:05	9:55	1037.5	-1516.6	1837.6	3450.3
4:00	8:00	1732.1	-887.0	1946.0	3175.1	2:00	10:00	1000.0	-1536.3	1833.1	3458.1
3:55	8:05	1709.8	-920.3	1941.8	3191.1						
3:50	8:10	1686.8	-953.2	1937.5	3206.7						
3:45	8:15	1662.9	-985.6	1933.1	3221.9						
3:40	8:20	1638.3	-1017.5	1928.6	3236.8						
3:35	8:25	1612.9	-1049.0	1924.0	3251.3						
3:30	8:30	1586.7	-1080.0	1919.4	3265.4						
3:25	8:35	1559.8	-1110.4	1914.6	3279.1						
3:20	8:40	1532.1	-1140.3	1909.9	3292.5						
3:15	8:45	1503.7	-1169.7	1905.1	3305.5						
3:10	8:50	1474.6	-1198.5	1900.2	3318.2						
3:05	8:55	1444.7	-1226.8	1895.3	3330.5						
3:00	9:00	1414.2	-1254.4	1890.4	3342.4						

**Analematic Sundial**

Latitude: 62.5° N/S

**Date Scale**

Semi-Major Axis (E-W): 2000 mm    Semi-Minor Axis (N-S): 1774.0 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-391.8	-384.4	-382.1	-372.0	-369.0	-356.3	-352.8	-337.8	-333.8	-316.7	-312.2
February	-283.4	-262.7	-257.3	-235.4	-229.9	-206.9	-201.0	-177.3	-171.3	-146.9	-140.7
March	-122.1	-97.1	-90.7	-65.4	-59.1	-33.5	-27.2	-1.6	4.7	30.2	36.4
April	74.3	99.2	105.4	129.8	135.9	159.8	165.7	189.1	194.8	217.3	222.7
May	249.5	270.0	275.0	294.0	298.6	316.2	320.3	336.3	340.1	354.1	357.3
June	374.6	383.7	385.7	392.4	393.9	398.1	398.7	400.2	400.4	397.5	398.9
July	393.9	387.6	385.7	377.2	374.8	363.8	360.8	347.7	344.2	329.2	325.2
August	299.7	281.1	276.4	256.5	251.4	230.4	225.0	203.0	197.5	174.7	168.8
September	133.6	109.5	103.4	78.8	72.7	47.9	41.8	16.8	10.5	-14.7	-21.0
October	-52.3	-77.4	-83.6	-108.5	-114.5	-139.2	-145.3	-169.3	-175.3	-198.8	-204.6
November	-238.3	-259.9	-265.2	-285.5	-290.5	-309.4	-313.8	-331.0	-335.0	-350.3	-353.9
December	-369.7	-380.4	-382.7	-390.5	-392.2	-397.1	-398.1	-400.2	-400.4	-399.4	-398.9

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	391.8	384.4	382.1	372.0	369.0	356.3	352.8	337.8	333.8	316.7	312.2
February	283.4	262.7	257.3	235.4	229.9	206.9	201.0	177.3	171.3	146.9	140.7
March	122.1	97.1	90.7	65.4	59.1	33.5	27.2	1.6	-4.7	-30.2	-36.4
April	-74.3	-99.2	-105.4	-129.8	-135.9	-159.8	-165.7	-189.1	-194.8	-217.3	-222.7
May	-249.5	-270.0	-275.0	-294.0	-298.6	-316.2	-320.3	-336.3	-340.1	-354.1	-357.3
June	-374.6	-383.7	-385.7	-392.4	-393.9	-398.1	-398.7	-400.2	-400.4	-397.5	-398.9
July	-393.9	-387.6	-385.7	-377.2	-374.8	-363.8	-360.8	-347.7	-344.2	-329.2	-325.2
August	-299.7	-281.1	-276.4	-256.5	-251.4	-230.4	-225.0	-203.0	-197.5	-174.7	-168.8
September	-133.6	-109.5	-103.4	-78.8	-72.7	-47.9	-41.8	-16.8	-10.5	14.7	21.0
October	52.3	77.4	83.6	108.5	114.5	139.2	145.3	169.3	175.3	198.8	204.6
November	238.3	259.9	265.2	285.5	290.5	309.4	313.8	331.0	335.0	350.3	353.9
December	369.7	380.4	382.7	390.5	392.2	397.1	398.1	400.2	400.4	399.4	398.9

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
- 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: 62.5° N/S

Earliest Sunrise: 2:00 a.m. Latest Sunset: 10:00 p.m.  
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 2217.5 mm  
 Sunrise/Sunset Markers: X = ± 377.1 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
12:00		0.0	2217.5	2217.5	0.0						
11:55	12:05	54.5	2217.0	2217.7	54.5	8:25	3:35	2016.1	1311.2	2405.0	2210.4
11:50	12:10	109.0	2215.4	2218.1	109.1	8:20	3:40	2047.9	1271.9	2410.7	2255.7
11:45	12:15	163.5	2212.8	2218.8	163.6	8:15	3:45	2078.7	1232.0	2416.3	2300.5
11:40	12:20	217.9	2209.1	2219.8	218.1	8:10	3:50	2108.5	1191.5	2421.8	2344.9
11:35	12:25	272.2	2204.3	2221.1	272.5	8:05	3:55	2137.3	1150.4	2427.2	2388.9
11:30	12:30	326.3	2198.6	2222.6	326.9	8:00	4:00	2165.1	1108.8	2432.5	2432.5
11:25	12:35	380.3	2191.7	2224.5	381.2	7:55	4:05	2191.8	1066.6	2437.6	2475.6
11:20	12:40	434.1	2183.8	2226.6	435.4	7:50	4:10	2217.5	1023.9	2442.5	2518.3
11:15	12:45	487.7	2174.9	2228.9	489.6	7:45	4:15	2242.2	980.8	2447.3	2560.6
11:10	12:50	541.1	2165.0	2231.6	543.6	7:40	4:20	2265.8	937.2	2451.9	2602.5
11:05	12:55	594.2	2154.0	2234.4	597.6	7:35	4:25	2288.3	893.1	2456.4	2643.9
11:00	1:00	647.0	2142.0	2237.6	651.4	7:30	4:30	2309.7	848.6	2460.7	2684.9
10:55	1:05	699.6	2128.9	2240.9	705.2	7:25	4:35	2330.0	803.7	2464.7	2725.4
10:50	1:10	751.8	2114.9	2244.5	758.7	7:20	4:40	2349.2	758.4	2468.6	2765.5
10:45	1:15	803.6	2099.8	2248.4	812.2	7:15	4:45	2367.3	712.8	2472.3	2805.1
10:40	1:20	855.1	2083.8	2252.4	865.4	7:10	4:50	2384.3	666.8	2475.8	2844.2
10:35	1:25	906.1	2066.8	2256.7	918.6	7:05	4:55	2400.1	620.5	2479.0	2882.9
10:30	1:30	956.7	2048.7	2261.1	971.5	7:00	5:00	2414.8	573.9	2482.1	2921.1
10:25	1:35	1006.9	2029.7	2265.7	1024.2	6:55	5:05	2428.4	527.1	2484.9	2958.8
10:20	1:40	1056.5	2009.8	2270.6	1076.8	6:50	5:10	2440.7	480.0	2487.5	2996.1
10:15	1:45	1105.7	1988.8	2275.5	1129.1	6:45	5:15	2452.0	432.6	2489.8	3032.8
10:10	1:50	1154.4	1967.0	2280.7	1181.3	6:40	5:20	2462.0	385.1	2492.0	3069.1
10:05	1:55	1202.5	1944.2	2286.0	1233.2	6:35	5:25	2470.9	337.3	2493.8	3104.9
10:00	2:00	1250.0	1920.4	2291.4	1284.8	6:30	5:30	2478.6	289.4	2495.5	3140.2
9:55	2:05	1296.9	1895.8	2297.0	1336.2	6:25	5:35	2485.1	241.4	2496.8	3175.1
9:50	2:10	1343.2	1870.2	2302.6	1387.4	6:20	5:40	2490.5	193.3	2498.0	3209.4
9:45	2:15	1388.9	1843.8	2308.4	1438.3	6:15	5:45	2494.6	145.0	2498.9	3243.2
9:40	2:20	1433.9	1816.5	2314.3	1489.0	6:10	5:50	2497.6	96.7	2499.5	3276.6
9:35	2:25	1478.3	1788.3	2320.2	1539.3	6:05	5:55	2499.4	48.4	2499.9	3309.4
9:30	2:30	1521.9	1759.3	2326.2	1589.4	6:00	6:00	2500.0	0.0	2500.0	3341.8
9:25	2:35	1564.8	1729.4	2332.3	1639.2	5:55	6:05	2499.4	-48.4	2499.9	3373.6
9:20	2:40	1607.0	1698.7	2338.4	1688.6	5:50	6:10	2497.6	-96.7	2499.5	3405.0
9:15	2:45	1648.4	1667.2	2344.5	1737.8	5:45	6:15	2494.6	-145.0	2498.9	3435.8
9:10	2:50	1689.0	1634.9	2350.7	1786.6	5:40	6:20	2490.5	-193.3	2498.0	3466.2
9:05	2:55	1728.8	1601.9	2356.8	1835.1	5:35	6:25	2485.1	-241.4	2496.8	3496.0
9:00	3:00	1767.8	1568.0	2363.0	1883.3	5:30	6:30	2478.6	-289.4	2495.5	3525.4
8:55	3:05	1805.9	1533.4	2369.1	1931.1	5:25	6:35	2470.9	-337.3	2493.8	3554.3
8:50	3:10	1843.2	1498.1	2375.2	1978.6	5:20	6:40	2462.0	-385.1	2492.0	3582.6
8:45	3:15	1879.6	1462.1	2381.3	2025.7	5:15	6:45	2452.0	-432.6	2489.8	3610.5
8:40	3:20	1915.1	1425.4	2387.3	2072.5	5:10	6:50	2440.7	-480.0	2487.5	3637.8
8:35	3:25	1949.7	1388.0	2393.3	2118.8	5:05	6:55	2428.4	-527.1	2484.9	3664.7
8:30	3:30	1983.4	1349.9	2399.2	2164.8	5:00	7:00	2414.8	-573.9	2482.1	3691.0

Analemmatic Sundial

Latitude: 62.5° N/S

Earliest Sunrise: 2:00 a.m. Latest Sunset: 10:00 p.m.  
 Semi-Major Axis (E-W): 2500 mm Semi-Minor Axis (N-S): 2217.5 mm  
 Sunrise/Sunset Markers: X = ± 377.1 mm

Local Time		X	Y	Z	W	Local Time		X	Y	Z	W
4:55	7:05	2400.1	-620.5	2479.0	3716.9	2:55	9:05	1728.8	-1601.9	2356.8	4192.4
4:50	7:10	2384.3	-666.8	2475.8	3742.2	2:50	9:10	1689.0	-1634.9	2350.7	4206.4
4:45	7:15	2367.3	-712.8	2472.3	3767.1	2:45	9:15	1648.4	-1667.2	2344.5	4220.0
4:40	7:20	2349.2	-758.4	2468.6	3791.5	2:40	9:20	1607.0	-1698.7	2338.4	4233.1
4:35	7:25	2330.0	-803.7	2464.7	3815.4	2:35	9:25	1564.8	-1729.4	2332.3	4245.8
4:30	7:30	2309.7	-848.6	2460.7	3838.7	2:30	9:30	1521.9	-1759.3	2326.2	4258.1
4:25	7:35	2288.3	-893.1	2456.4	3861.6	2:25	9:35	1478.3	-1788.3	2320.2	4269.9
4:20	7:40	2265.8	-937.2	2451.9	3884.0	2:20	9:40	1433.9	-1816.5	2314.3	4281.3
4:15	7:45	2242.2	-980.8	2447.3	3906.0	2:15	9:45	1388.9	-1843.8	2308.4	4292.3
4:10	7:50	2217.5	-1023.9	2442.5	3927.4	2:10	9:50	1343.2	-1870.2	2302.6	4302.8
4:05	7:55	2191.8	-1066.6	2437.6	3948.4	2:05	9:55	1296.9	-1895.8	2297.0	4312.9
4:00	8:00	2165.1	-1108.8	2432.5	3968.8	2:00	10:00	1250.0	-1920.4	2291.4	4322.6
3:55	8:05	2137.3	-1150.4	2427.2	3988.8						
3:50	8:10	2108.5	-1191.5	2421.8	4008.4						
3:45	8:15	2078.7	-1232.0	2416.3	4027.4						
3:40	8:20	2047.9	-1271.9	2410.7	4046.0						
3:35	8:25	2016.1	-1311.2	2405.0	4064.1						
3:30	8:30	1983.4	-1349.9	2399.2	4081.7						
3:25	8:35	1949.7	-1388.0	2393.3	4098.9						
3:20	8:40	1915.1	-1425.4	2387.3	4115.6						
3:15	8:45	1879.6	-1462.1	2381.3	4131.9						
3:10	8:50	1843.2	-1498.1	2375.2	4147.7						
3:05	8:55	1805.9	-1533.4	2369.1	4163.1						
3:00	9:00	1767.8	-1568.0	2363.0	4178.0						

## Analematic Sundial

Latitude: 62.5° N/S

## Date Scale

Semi-Major Axis (E-W): 2500 mm    Semi-Minor Axis (N-S): 2217.5 mm

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	-489.8	-480.5	-477.7	-465.0	-461.2	-445.4	-441.0	-422.2	-417.2	-395.9	-390.3
February	-354.2	-328.4	-321.7	-294.2	-287.4	-258.7	-251.3	-221.7	-214.2	-183.7	-175.8
March	-152.6	-121.3	-113.4	-81.7	-73.8	-41.9	-34.1	-2.0	5.8	37.7	45.6
April	92.9	124.0	131.7	162.2	169.8	199.8	207.1	236.3	243.5	271.6	278.4
May	311.9	337.6	343.7	367.5	373.3	395.2	400.4	420.4	425.2	442.7	446.6
June	468.3	479.6	482.2	490.5	492.4	497.6	498.3	500.3	500.5	496.9	498.6
July	492.4	484.5	482.2	471.6	468.5	454.7	451.0	434.6	430.2	411.5	406.5
August	374.6	351.4	345.4	320.6	314.3	288.0	281.2	253.8	246.8	218.3	211.0
September	167.0	136.8	129.3	98.6	90.9	59.9	52.2	21.0	13.1	-18.3	-26.2
October	-65.3	-96.7	-104.4	-135.6	-143.2	-174.0	-181.6	-211.7	-219.2	-248.5	-255.7
November	-297.9	-324.9	-331.4	-356.9	-363.1	-386.7	-392.3	-413.8	-418.8	-437.8	-442.4
December	-462.2	-475.6	-478.4	-488.1	-490.2	-496.4	-497.6	-500.3	-500.5	-499.3	-498.6

Northern Hemisphere

Month	Date										
	1	5	6	10	11	15	16	20	21	25	26
January	489.8	480.5	477.7	465.0	461.2	445.4	441.0	422.2	417.2	395.9	390.3
February	354.2	328.4	321.7	294.2	287.4	258.7	251.3	221.7	214.2	183.7	175.8
March	152.6	121.3	113.4	81.7	73.8	41.9	34.1	2.0	-5.8	-37.7	-45.6
April	-92.9	-124.0	-131.7	-162.2	-169.8	-199.8	-207.1	-236.3	-243.5	-271.6	-278.4
May	-311.9	-337.6	-343.7	-367.5	-373.3	-395.2	-400.4	-420.4	-425.2	-442.7	-446.6
June	-468.3	-479.6	-482.2	-490.5	-492.4	-497.6	-498.3	-500.3	-500.5	-496.9	-498.6
July	-492.4	-484.5	-482.2	-471.6	-468.5	-454.7	-451.0	-434.6	-430.2	-411.5	-406.5
August	-374.6	-351.4	-345.4	-320.6	-314.3	-288.0	-281.2	-253.8	-246.8	-218.3	-211.0
September	-167.0	-136.8	-129.3	-98.6	-90.9	-59.9	-52.2	-21.0	-13.1	18.3	26.2
October	65.3	96.7	104.4	135.6	143.2	174.0	181.6	211.7	219.2	248.5	255.7
November	297.9	324.9	331.4	356.9	363.1	386.7	392.3	413.8	418.8	437.8	442.4
December	462.2	475.6	478.4	488.1	490.2	496.4	497.6	500.3	500.5	499.3	498.6

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    | 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 |