

# SUNSET



# SUNRISE

## TIMES



FOR OVER 200 COUNTRIES  
**WORLDWIDE**



COMPILED FOR  
S P E E D X  
P. O. BOX E  
ELSINORE, CALIFORNIA  
92330 USA

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## WORLD SUNSET-SUNRISE CHART

Why is it advantageous for a SWL to learn when the sun sets in Togo? Or when the sun rises in Afghanistan? This can be answered in one word. Propagation! A SWL soon discovers that there are certain times of the day, and certain times of the year that he can hear stations from various parts of the world. Try as he might, they just can't be heard at other times. The purpose of this sunset-sunrise chart is to give you a good idea of just when to tune in to listen to different parts of the world.

From this chart you will be able to determine when there is a favorable darkness path, or daylight path, between you and the transmitter. This is especially important when tuning the 'low' bands for those small regional stations in Africa, Asia, Latin America, etc., since they can not be heard at all unless the intire path between receiver and transmitter is in darkness (unless of course, you very close to the transmitter).

### HOW TO USE CHART

Refer to the country and month you are interested in. Compare with your local sunset-sunrise times and, BINGO. Once the most favorable times are determined, keep in mind that daily propagation conditions, other stations on the same frequency, power of the station in question, geo-magnetic activity, and the broadcasting schedule will effect your sucess, as well as the receiver and antenna you are operating with.

### EXAMPLE

Say it is mid-July in Elsinore, California and I want to try for Togo in the 60 meter band. A continuous darkness path will be necessary between Elsinore & Togo. Look at the chart for Togo sunset-sunrise times in July. We find the sun sets at 1811 GMT and rises at 0547 GMT. In Elsinore at this time of year the darkness span is 0300-1247 GMT. From this we see from Elsinore sunset at 0300 to Togo sunrise at 0547 we have a 2 hour 47 minute period of darkness. This would be the best time to try.

### EXAMPLE

Its March First in Elsinore and I want to know when to listen for the country of Singapore on 5052 kHz. The chart indicates sunset-sunrise times for Singapore on March First is 1120-2313 GMT(NOTE:To find the time for the first or last of a month, interpolate. That is, half way between February and March times listed(they are figured for the 15th) would be March First.). Times for Elsinore the 1rst of March are 0145-1419 GMT. So, from Singapore sunset to Elsinore sunrise would be 1120-1419. In practice Singapore can be heard a little before and a little after this time.

### REMEMBER

ALL TIMES IN THIS CHART ARE GREENWICH MEAN TIME (GMT). TIMES ARE COMPUTED TO MID-MONTH VALUES. In extreme Northern and Southern latitudes there is a great difference from month to month sunset-sunrise times. One should interpolate. At or near the Equator little variance will be noted from month to month.

## GRID COORDINATES

The last column in the chart gives the grid coordinates of the point each time is figured for that country. To find the times for any spot that is approximately East or West of locations given, one needs only a world globe or great circle chart, map, atlas, or whatever, and estimate the number of degrees between the known point(from chart)and the point desired.

### EXAMPLE

From looking at a map you will note that Perth, Australia is about 29° West of site given in this chart for Australia(Shepperton). The rule is to add 4 minutes per degree if site in question is West of known site. Subtract if it is East of known site.

Since Perth is 29° West you will add 4 minutes X 29° = 116 minutes or one hour and 56 minutes. Any times listed for Shepperton can be used for Perth by adding 1 hour 56 minutes.

### EXAMPLE

The difference between Warsaw, Poland and Berlin, East Germany is about 8°. Warsaw is 8° East of Berlin so you would subtract 4 minutes per degree(4 X 8 = 32)or 32 minutes from Berlin sunset-sunrise times to find Warsaw times.

ADD 4 MINUTES FOR EACH DEGREE DIFFERENCE GOING WEST

SUBTRACT 4 MINUTES FOR EACH DEGREE DIFFERENCE GOING EAST

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## CORRECTION!

DUE TO MATHEMATICAL ERROR, ALL TIMES FOR BRAZIL ARE WRONG. PLEASE ADD 5 HOURS 42 MINUTES TO ALL TIMES LISTED FOR BRAZIL.

COUNTRY	JAN	FEB	MAR	APR	MAY	JUN
AFARS & ISSAS	1504-0331	1515-0329	1519-0314	1520-0255	1525-0244	1533-0234
AFGHANISTAN	1236-0230	1305-0209	1331-0133	1356-0050	1420-0019	1438-0008
ALASKA	0053-1805	0207-1659	0321-1534	0437-1400	0552-1239	0642-1159
ALBANIA	1538-0603	1614-0536	1648-0452	1721-0400	1752-0322	1814-0308
ALGERIA	1656-0658	1727-0636	1754-0557	1822-0512	1847-0439	1907-0427
ANDORRA	1601-0637	1639-0608	1715-0520	1752-0426	1826-0345	1849-0329
ANGOLA	1735-0459	1733-0509	1721-0511	1704-0509	1655-0511	1656-0518
ANGUILLA	2158-1046	2213-1039	2219-1022	2229-0955	2238-0938	2248-0936
ANTIGUA	2153-1038	2208-1032	2216-1013	2222-0950	2231-0934	2240-0932
ARGENTINA	2309-0856	2244-0926	2212-0952	2128-1038	2103-1050	2035-1105
ASCENSION I	1918-0645	1917-0655	1905-0656	1850-0653	1842-0655	1843-0702
AUSTRALIA	0938-1928	0916-1949	0837-2017	0753-2053	0728-2115	0700-2130
AUSTRIA	1529-0638	1615-0652	1700-0506	1745-0403	1827-0314	1855-0254
AZORES	1829-0856	1921-0833	1950-0752	2019-0706	2046-0633	2107-0621
BAHAMAS	2242-1155	2303-1144	2318-1117	2332-1046	2347-1027	0000-1018
BAHRAIN	1346-0303	1408-0251	1424-0223	1439-0151	1454-0128	1508-0122
BANGLADESH	1115-0103	1143-0044	1207-0008	1233-2324	1253-2258	1311-2249
BARBADOS	2153-1027	2205-1023	2211-1007	2214-0946	2219-0933	2228-0931
BELGIUM	1607-0737	1657-0656	1747-0555	1837-0445	1925-0352	1955-0328
BELIZE	2319-1206	2354-1220	0003-1200	0010-1136	0019-1120	0029-1118
BERMUDA	2141-1124	2208-1106	2232-1032	2253-0953	2314-0924	2332-0915
BOLIVIA-LaPaz	2312-1012	2306-1026	2247-1035	2224-1040	2209-1048	2208-1157
BOTSWANA	1711-0340	1659-0401	1632-0417	1601-0438	1541-0453	1524-0502
BRAZIL-Rio	1600-0238	1550-0257	1525-0311	1456-0326	1436-0342	1421-0349
BRUNEI	1026-2233	1034-2235	1032-2226	1027-2213	1027-2205	1032-2208
BULGARIA	1520-0554	1557-0526	1634-0438	1710-0344	1743-0304	1805-0248
BURMA	1123-0008	1138-0002	1146-2343	1152-2320	1201-2304	1210-2302
BURUNDI	1622-0403	1614-0410	1616-0408	1609-0357	1609-0350	1613-0353
CAMEROON	1722-0526	1729-0528	1726-0520	1720-0458	1720-0501	1724-0504
CANADA-Sackv.	2044-1202	2137-1127	2217-1039	2254-0942	2342-0902	0002-0832
CANARY I	1831-0758	1855-0744	1914-0714	1932-0638	1949-0614	2004-0606
CANTON I	0556-1736	0558-1743	0549-1741	0537-1736	0531-1734	0534-1738
CAPE VERDE I	1925-0803	1938-0758	1945-0741	1949-0719	1955-0705	2005-0703
CAYMAN I	2249-1159	2319-1159	2329-1134	2334-1109	2349-1059	2359-1039
CE AF REP	1654-0458	1701-0500	1658-0452	1652-0440	1652-0433	1656-0436
CHAD	1656-0524	1707-0521	1711-0506	1712-0547	1717-0536	1725-0525
CHILE-Santi.	2356-0959	2337-1017	2301-1042	2220-1116	2200-1135	2126-1153
CHINA-Peking	0854-2344	0944-2314	1014-2234	1044-2144	1124-2114	1144-2044
CHRISTMAS I	1127-2246	1124-2257	1111-2301	1053-2301	1043-2304	1044-2311
COCOS I	1229-2344	1226-2356	1211-0001	1152-0001	1141-0006	1141-0013
COLUMBIA	2310-1109	2318-1101	2316-1102	2311-1049	2311-1041	2316-1044
COMORO I	1533-0247	1529-0257	1513-0302	1453-0304	1441-0309	1441-0316
CONGO REP	1707-0511	1714-0513	1711-0505	1705-0453	1705-0446	1709-0449
COOK I	0527-1611	0518-1629	0455-1641	0428-1649	0411-1700	0407-1709
COSTA RICA	2316-1206	2346-1206	2346-1151	2346-1136	2351-1126	2356-1116
CUBA	2307-1213	2326-1202	2340-1138	2351-1109	0004-1048	0016-1043
CYPRUS	1507-0501	1536-0441	1602-0404	1626-0321	1651-0250	1709-0239
CZECHOSLOVAKIA	1524-0654	1614-0613	1704-0512	1754-0402	1842-0309	1912-0245
DAHOMEY	1755-0605	1803-0606	1802-0556	1758-0542	1758-0534	1804-0536
DENMARK	1506-0736	1610-0640	1714-0525	1820-0401	1922-0251	2005-0217
DOMINICA	2155-1053	2208-1024	2215-1011	2219-0949	2225-0935	2235-0933
DOM REP	2225-1115	2240-1108	2250-1047	2256-1022	2307-1005	2317-1003
ECUADOR	2323-1133	2328-1133	2323-1123	2318-1113	2313-1113	2313-1113
EGYPT	1505-0455	1540-0440	1610-0410	1615-0335	1640-0315	1655-0300
EQ GUINEA	1733-0537	1740-0539	1737-0531	1731-0519	1731-0512	1745-0515



JUL	AUG	SEP	OCT	NOV	DEC	GRID COORDINATE	
1530-0250	1523-0308	1508-0258	1451-0257	1441-0305	1447-0318	43.00E	11.30N
1433-0023	1408-0045	1325-0110	1241-0128	1208-0200	1208-0225	69.14E	34.39N
0619-1229	0509-1334	0334-1449	0217-1554	0055-1711	0015-1815	149.48W	61.12N
1806-0321	1731-0356	1646-0426	1556-0451	1511-0526	1511-0526	19.50E	41.18N
1857-0447	1832-0509	1749-0534	1715-0542	1642-0621	1635-0650	3.11E	36.42N
1834-0349	1759-0431	1711-0456	1631-0520	1549-0557	1537-0631	1.30E	42.38N
1702-0527	1720-0527	1707-0500	1702-0444	1707-0436	1722-0443	13.15E	8.50S
2247-0947	2230-1002	2212-1002	2158-1005	2136-1016	2140-1035	62.54W	18.15N
2241-0941	2224-0955	2206-0956	2146-0958	2132-1009	2136-1021	61.32W	17.07N
2056-1103	2115-1043	2140-0953	2205-0913	2233-0842	2301-0833	58.22W	34.36S
1847-0702	1847-0702	1852-0645	1846-0630	1851-0622	1905-0630	13.00W	8.00S
0711-2118	0730-2058	0755-2008	0822-1926	0852-1853	0921-1845	145.25E	36.20S
1849-0309	1804-0349	1702-0436	1610-0510	1520-0557	1503-0636	16.28E	48.00N
2058-0638	2030-0703	1945-0730	1909-0749	1834-0821	1825-0851	25.45W	37.40N
2359-1031	2339-1046	2309-1059	2244-1106	2223-1124	2223-1146	77.20W	25.05N
1505-0207	1445-0152	1415-0205	1350-0213	1327-0231	1329-0252	51.17E	26.15N
1309-2259	1244-2321	1201-2346	1117-0004	1044-0036	1044-0101	90.12E	33.27N
2134-0844	2126-0904	2109-0859	2051-0859	2039-0908	2045-0924	59.48W	13.30N
1948-0346	1902-0427	1754-0520	1654-0602	1559-0653	1538-0737	4.34E	50.44N
0028-1128	0011-1143	2353-1143	2339-1146	2317-1157	2321-1216	88.10W	17.31N
2333-0923	2308-0945	2225-1010	2154-1025	2125-1049	2121-1116	65.45W	32.20N
2212-1054	2215-1050	2232-1027	2232-1004	2243-1049	2301-0952	68.03W	16.31S
1538-0501	1553-0446	1611-0413	1621-0343	1641-0321	1703-0321	25.58E	24.42S
1437-0344	1449-0344	1507-0306	1512-0238	1528-0219	1548-0220	42.43W	22.27S
1035-2212	1027-2220	1020-2210	1007-2205	1002-2207	1011-2220	114.59E	5.00N
1752-0307	1717-0419	1629-0414	1548-0438	1507-0515	1455-0549	23.20E	42.43N
1211-2311	1154-2326	1136-2326	1122-2329	1100-2335	1104-2359	96.05E	16.55N
1605-0408	1557-0408	1603-0355	1554-0344	1535-0340	1607-0349	29.21E	3.23S
1729-0506	1721-0514	1714-0504	1702-0459	1657-0459	1707-0512	11.32E	3.51N
2357-0854	2319-0819	2224-0959	2135-1031	2049-1114	2034-1150	64.19W	45.53N
1958-0623	1942-0639	1905-0655	1839-0704	1814-0624	1813-0749	16.15W	28.28N
0538-1741	0530-1741	0536-1128	0527-1717	0508-1713	0540-1722	174.00W	4.00S
2004-0711	1942-0726	1934-0724	1916-0725	1902-0734	1908-0751	23.30W	14.55N
2359-1044	2339-1104	2319-1109	2258-1113	2240-1126	2243-1146	79.50W	19.45N
1701-0438	1653-0446	1646-0436	1634-0431	1629-0431	1639-0444	18.35E	4.21N
1722-0422	1715-0500	1700-0450	1643-0449	1633-0457	1639-0510	15.03E	12.08N
2146-1153	2205-1133	2230-1043	2255-1004	2321-0934	2348-0929	70.40W	33.26S
1134-2059	1104-2129	1019-2159	0938-2222	0900-2256	0851-2328	116.23E	39.55N
1047-2312	1047-2312	1057-2252	1053-2234	1058-2224	1113-2231	105.43E	10.25S
1147-0012	1147-0012	1157-2352	1153-2334	1158-2324	1113-2331	90.50E	11.50S
2311-1038	2253-1046	2246-1036	2234-1031	2229-1031	2239-1044	74.06W	4.38N
1524-0239	1516-0254	1459-0249	1457-0234	1504-0223	1519-0229	45.17E	12.45S
1659-0506	1654-0506	1659-0457	1651-0440	1652-0434	1705-0439	15.18E	4.15S
0409-1709	0429-1654	0439-1634	0442-1609	0456-1551	0516-1552	159.48W	21.11S
2356-1121	2351-1136	2336-1126	2317-1126	2256-1136	2316-1146	84.05W	9.57N
0018-1055	2358-1110	2330-1120	2307-1106	2247-1142	2248-1203	82.30W	23.00N
1704-0254	1639-0316	1556-0341	1511-0359	1439-0431	1439-0456	31.28E	34.56N
1905-0303	1819-0344	1711-0437	1611-0519	1516-0610	1455-0654	15.09E	50.09N
1806-0542	1758-0550	1750-0540	1737-0536	1731-0538	1739-0549	2.23E	6.21N
1941-0251	1843-0343	1723-0446	1618-0535	1512-0638	1444-0725	12.21E	55.41N
2234-0941	2222-0956	2204-0954	2146-0955	2132-1004	2138-1021	61.05W	15.24N
2315-1015	2258-1030	2240-1030	2226-1033	2204-1044	2208-1103	69.55W	18.30N
2323-1113	2313-1113	2313-1103	2258-1058	2253-1058	2313-1103	78.20W	.14S
1655-0310	1635-0325	1555-0345	1527-0355	1501-0418	1458-0442	31.22E	30.16N
1740-0517	1732-0525	1725-0515	1713-0510	1708-0510	1718-0523	8.42E	3.43N

COUNTRY	JAN	FEB	MAR	APR	MAY	JUN
EL SALVADOR	2350-1224	0002-1220	0008-1204	0011-1143	0016-1130	0025-1128
ETHIOPIA	1525-0344	1535-0344	1537-0331	1535-0314	1538-0305	1545-0306
FALKLAND ISL	0014-0813	2331-0906	2228-0957	2120-1048	2026-1134	2004-1204
FAROE ISL	1558-0913	1703-0820	1828-0643	1948-0505	2106-0343	2156-0303
FIJI ISL	0647-1742	0630-1758	0620-1808	0556-1814	0540-1823	0538-1833
FINLAND	1403-0718	1508-0625	1633-0448	1753-0311	1911-0148	2000-0108
FRANCE	1631-0733	1715-0658	1754-0604	1841-0502	1921-0415	1949-0356
GABON	1708-0503	1704-0501	1708-0505	1722-0511	1726-0508	1719-0511
GAMBIA	1903-0737	1915-0733	1921-0717	1924-0656	1929-0643	1938-0641
GERMANY EAST	1525-0711	1619-0626	1712-0521	1807-0408	1859-0310	1934-0245
GERMANY WEST	1552-0701	1638-0625	1723-0529	1808-0426	1850-0337	1918-0317
GHANA	1805-0612	1813-0614	1811-0605	1806-0552	1806-0544	1811-0547
GILBERT/ELLICE	0630-1825	0626-1823	0630-1827	0644-1833	0648-1830	0641-1833
GIBRALTER	1731-0730	1802-0709	1829-0631	1855-0547	1920-0514	1939-0503
GREAT BRITAIN	1621-0758	1713-0715	1805-0613	1857-0502	1946-0406	2019-0342
GREECE	1530-0539	1603-0516	1632-0435	1701-0348	1729-0314	1749-0301
GREENLAND	1856-1218	2008-1113	2126-0944	2250-0805	0011-0643	0056-0558
GRENADA	2203-1031	2214-1028	2218-1013	2219-0954	2224-0943	2232-1032
GUADELOUPE	2152-1037	2207-1031	2215-1012	2221-0947	2230-0933	2239-0931
GUAM	0820-2054	0832-2050	0838-2034	0841-2013	0846-2000	0855-1958
GUATEMALA	2355-1229	0007-1225	0013-1209	0016-1148	0021-1135	0030-1133
GUINEA PORT	1858-0726	1909-0723	1913-0708	1914-0649	1919-0638	1927-0727
GUINEA REP	1835-0725	1905-0725	1905-0710	1905-0655	1910-0645	1915-0635
GUYANA FRENCH	2134-0941	2142-0943	2140-0934	2135-0921	2135-913	2140-0916
GUYANA REP	2155-1008	2204-1009	2204-0958	2200-0943	2202-0935	2210-0937
HAITI	2234-1124	2249-1117	2259-1056	2305-1031	2316-1014	2326-1012
HAWAII	0401-1711	0431-1711	0441-1746	0446-1721	0501-1611	0511-1551
HOLLAND	1557-0743	1651-0658	1744-0543	1839-0440	1931-0342	2006-0317
HONDURAS	2322-1156	2334-1152	2340-1136	2343-1115	2348-1102	2357-1100
HONG HONG	1002-2304	1014-2254	1033-2231	1043-2203	1055-2143	1107-2138
HUNGARY	1516-0625	1602-0549	1647-0453	1732-0350	1814-0301	1942-0241
ICELAND	1655-1017	1807-0912	1925-0743	2049-0604	2210-0442	2255-0357
INDIA	1217-0126	1241-0130	1300-0100	1318-0024	1335-0000	1350-2352
INDONESIA	1150-2254	1120-2302	1110-2301	1057-2257	1049-2257	1052-2303
IRAN	1344-0343	1415-0322	1442-0244	1508-0200	1533-0227	1552-0116
IRAQ	1419-0407	1447-0348	1511-0312	1537-0228	1557-0202	1615-0153
IRELAND	1642-0828	1736-0743	1829-0638	1924-0525	2026-0427	2051-0355
ISRAEL	1457-0440	1524-0412	1548-0348	1609-0309	1630-0240	1648-0231
ITALY	1605-0635	1642-0607	1717-0521	1751-0428	1824-0349	1847-0334
IVORY COAST	1822-0629	1830-0631	1828-0622	1823-0609	1823-0601	1828-0601
JAMAICA	2255-1145	2310-1138	2320-1117	2326-1052	2337-1035	2347-1033
JAPAN	0751-2150	0822-2129	0849-2051	0915-2007	0940-1934	0959-1923
JOHNSTON ISL	0459-1744	0514-1738	0522-1719	0528-1656	0537-1640	0546-1638
JORDAN	1454-0437	1521-0419	1545-0345	1606-0306	1627-0237	1645-0228
KENYA	1535-0330	1531-0328	1535-0332	1549-0338	1553-0335	1546-0338
KHMER	1057-2325	1108-2322	1112-2307	1113-2248	1118-2237	1122-2237
KOREA NORTH	0840-2244	0913-2229	0944-2147	1015-2059	1043-2023	1104-2010
KOREA SOUTH	0841-2243	0912-2221	0939-2142	1007-2057	1032-2024	1052-2012
KUWAIT	1414-0323	1438-0327	1457-0257	1515-0221	1532-0157	1547-0149
LAOS	1054-2344	1109-2337	1119-2316	1125-2251	1136-2234	1146-2232
LEBANON	1452-0442	1520-0422	1545-0346	1609-0305	1632-0235	1650-0225
LESOTHO	1537-0446	1601-0440	1620-0420	1638-0344	1655-0320	1710-0312
LIBERIA	1848-0658	1856-0659	1855-0649	1851-0635	1851-0627	1857-0629
LIBYAN ARAB R	1623-0611	1651-0552	1715-0513	1741-0432	1801-0406	1819-0357
LORD HOWE ISL	0646-2029	0713-2011	0737-1937	0758-1858	0819-1829	0837-1820

JUL	AUG	SEP	OCT	NOV	DEC	GRID COORDINATE	
0022-1135	0014-1152	2357-1147	2339-1147	2327-1156	2333-1212	89.11W	13.45N
1543-0313	1538-0325	1525-0315	1511-0313	1502-0317	1511-0331	8.42E	3.43N
2019-1124	2119-1104	2149-1004	2235-0906	2326-0811	0009-0749	61.00W	50.45S
2128-0338	2018-0443	1843-0558	1716-0703	1604-0820	1524-0924	6.55W	62.00N
0540-1830	0551-1823	0605-1755	0606-1737	0618-1721	0637-1724	178.40E	18.10S
1933-0143	1823-0248	1648-0403	1521-0508	1409-0625	1329-0729	21.52E	61.28N
1937-0417	1917-0452	1800-0534	1709-0607	1621-0652	1605-0730	2.00E	47.00N
1712-0508	1704-0509	1706-0456	1657-0448	1657-0444	1709-0452	13.33E	1.36S
1942-0649	1932-0656	1912-0659	1851-0701	1840-0711	1846-0725	17.30W	13.15N
1918-0308	1828-0353	1720-0446	1612-0530	1514-0633	1455-0712	12.54E	52.38N
1912-0322	1827-0412	1725-0459	1633-0533	1543-0620	1526-0700	10.41E	48.05N
1814-0551	1806-0559	1759-0549	1746-0544	1741-0546	1750-0559	.10E	5.31N
0634-1830	0626-1831	0628-1818	0619-1810	0619-1806	0631-1814	173.00E	1.30S
1939-0515	1912-0539	1829-0603	1745-0628	1716-0655	1709-0724	5.22W	36.08N
2010-0400	1920-0445	1812-0538	1711-0621	1614-0714	1553-0756	.07W	51.30N
1748-0313	1719-0339	1634-0406	1551-0431	1516-0503	1507-0533	23.42E	38.02N
0038-0628	2328-0728	2148-0848	2018-1008	1856-1126	1818-1228	52.00W	64.00N
2229-0949	2222-1007	2207-0957	2150-0953	2140-1004	2146-1017	61.46W	12.01N
2240-0940	2223-0955	2205-0955	2151-0958	2129-1009	2133-1028	61.19W	16.07N
0859-2006	0849-2013	0829-2016	0809-2017	0757-2006	0803-2042	143.20E	14.00N
0034-1141	0024-1148	0004-1151	2344-1152	2332-1141	2338-1217	90.32W	14.37N
1924-0644	1917-0702	1902-0652	1845-0651	1835-0659	1841-0712	15.35W	11.51N
1915-0630	1910-0655	1855-0645	1835-0645	1815-0655	1835-0705	13.40W	9.32N
2143-0920	2135-0928	2128-0918	2115-0913	2110-0915	2119-0928	52.00W	5.00N
2213-0943	2207-0945	2152-0942	2138-0938	2131-0941	2140-0955	58.05W	6.49N
2324-1024	2307-1039	2249-1039	2235-1042	2213-1053	2217-1112	72.20W	18.35N
0511-1601	0451-1616	0430-1621	0410-1625	0352-1638	0355-1658	157.40W	20.00N
1950-0340	1900-0425	1752-0518	1644-0602	1546-0705	1520-0744	5.02E	52.01N
0001-1108	2351-1115	2331-1118	2311-1119	2259-1108	2305-1144	87.15W	14.08N
1110-2147	1054-2200	1027-2210	1000-2218	0941-2233	0943-2253	114.16E	22.15N
1836-0256	1751-0336	1649-0423	1557-0457	1507-0544	1450-0623	19.52E	47.35N
2237-0427	2127-0527	1947-0647	1717-0807	1655-0915	1607-1027	21.39W	64.09N
1344-0009	1333-0025	1251-0041	1225-0050	1200-0110	1159-0135	77.12E	28.43N
1057-2305	1051-2305	1057-2250	1050-2236	1053-2230	1106-2239	106.45E	6.17S
1552-0128	1525-0152	1442-0216	1358-0241	1329-0308	1322-0337	51.27E	35.41N
1613-0203	1548-0225	1505-0250	1421-0308	1348-0340	1348-0405	44.22E	33.14N
2035-0425	1945-0510	1837-0603	1729-0647	1631-0750	1612-0829	6.15W	53.20N
1649-0239	1624-0301	1541-0326	1510-0341	1441-0405	1437-0432	35.14E	31.46N
1835-0350	1805-0420	1717-0453	1632-0520	1552-0557	1540-0630	12.31E	41.48N
1831-0608	1823-0616	1816-0606	1803-0601	1758-0603	1807-0616	3.75W	5.21N
2345-1045	2328-1100	2310-1100	2256-1103	2234-1114	2238-1133	77.31W	18.21N
0959-1935	0932-1959	0849-2023	0805-2048	0736-2115	0729-2144	139.50E	36.10N
0547-1647	0530-1701	0512-1702	0452-1704	0438-1715	0442-1733	168.00W	17.00N
1646-0236	1621-0258	1538-0323	1507-0338	1438-0402	1434-0429	35.56E	31.57N
1539-0335	1531-0336	1533-0323	1524-0315	1524-0311	1536-0319	36.47E	1.21S
1123-2243	1116-2301	1101-2251	1044-2250	1034-2258	1040-2311	104.51E	11.34N
1103-2021	1033-2049	0947-2118	0902-2144	0825-2217	0816-2247	125.48E	39.03N
1042-2032	1017-2054	0934-2119	0900-2137	0827-2206	0820-2235	127.01E	37.16N
1541-0206	1525-0222	1448-0238	1422-0247	1357-0307	1356-0332	47.53E	29.16N
1144-2244	1127-2259	1109-2259	1055-2302	1033-2313	1037-2332	102.38E	18.01N
1650-0236	1625-0258	1609-0320	1506-0340	1436-0407	1430-0435	35.38E	34.08N
1704-0329	1648-0345	1611-0401	1545-0410	1520-0430	1519-0455	27.11E	29.09N
1859-0635	1851-0643	1843-0633	1830-0629	1824-0631	1832-0644	10.42W	6.14N
1817-0407	1752-0429	1709-0454	1625-0512	1552-0544	1552-0609	13.11E	32.54N
0838-1828	0813-1850	0730-1915	0659-1930	0630-1930	0626-2021	157.56E	31.44N



COUNTRY	JAN	FEB	MAR	APR	MAY	JUN
LUXEMBOURG	1559-0729	1649-0648	1739-0547	1829-0437	1917-0344	1947-0320
MACAU	1005-2307	1023-2257	1036-2234	1046-2206	1058-2146	1110-2141
MADEIRA	1823-0810	1851-0752	1915-0715	1938-0638	2000-0607	2017-0557
MALAGASY	1534-0225	1526-0242	1505-0252	1440-0300	1423-0309	1421-0320
MALAYSIA	1122-2323	1129-2325	1125-2318	1119-2307	1117-2301	1122-2304
MALAWI	1619-0321	1613-0334	1555-0343	1532-0347	1518-0355	1517-0404
MALDIVES	1321-0127	1328-0129	1326-0120	1321-0107	1321-0100	1325-0103
MALI	1826-0656	1837-0653	1842-0638	1844-0617	1849-0606	1857-0606
MALTA	1614-0613	1645-0552	1712-0514	1738-0430	1803-0357	1822-0346
MARSHALL ISL	0659-1921	0709-1919	0712-1906	0711-1849	0714-1838	0721-1839
MARTINQUE	2155-1032	2208-1028	2215-1011	2219-0949	2225-0936	2234-0934
MAURITANIA	1850-0738	1905-0731	1914-0711	1921-0647	1930-0630	1940-0628
MAURITIUS	1456-0144	1447-0201	1425-0212	1359-0220	1342-0231	1339-0242
MEXICO	0020-1314	0036-1306	0047-1244	0056-1218	0106-1200	0117-1157
MIDWAY ISL	0523-1848	0547-1834	0605-1805	0622-1730	0639-1706	0654-1659
MONACO	1619-0701	1658-0630	1736-0541	1814-0445	1850-0403	1914-0346
MONGOLIA	1020-0144	1109-0104	1157-0004	1246-2257	1332-2205	1402-2142
MONTSERRAT	2155-1050	2210-1034	2218-1015	2224-0952	2233-0936	2242-0934
MOROCCO	1742-0732	1810-0712	1835-0636	1859-0555	1922-0525	1940-0515
MOROBBIQUE	1656-0305	1640-0337	1609-0351	1532-0409	1506-0428	1459-0444
NAURU	0707-1857	0711-1902	0705-1857	0655-1849	0651-1845	0655-1849
NEPAL	1146-0111	1210-0057	1228-0028	1245-2353	1302-2329	1317-2322
NETH. ANT.	2229-1057	2240-1054	2244-1039	2245-1020	2250-1009	2258-1008
NEW CALEDONIA	0709-1824	0734-1843	0708-1856	0642-1906	0623-1918	0619-1930
NEW HEBRIDES	0728-1823	0721-1839	0701-1849	0637-1855	0621-1704	0619-1914
NEW ZEALAND	0754-1707	0727-1744	0642-1818	0551-1851	0513-1923	0459-1943
NICARAGUA	2341-1209	2352-1206	2356-1151	2357-1132	0002-1121	0010-1120
NIGER	1745-0619	1757-0615	1803-0559	1806-0538	1811-0525	1820-0525
NIGERIA	1747-0600	1756-0601	1756-0550	1752-0535	1754-0527	1800-0529
NORFOLK ISL	0751-1804	0736-1828	0705-1848	0630-1906	0605-1924	0558-1938
NORWAY	1457-0755	1608-0653	1719-0531	1832-0400	1942-0243	2030-0203
OMAN	1357-0249	1413-0241	1423-0220	1431-0155	1441-0138	1448-0135
PAKISTAN	1305-0218	1326-0207	1341-0140	1355-0109	1410-0047	1423-0041
PANAMA	2318-1137	2328-1137	2330-1124	2328-1107	2331-1058	2338-1059
PAPUA N/G	0839-2003	0837-2013	0825-2015	0808-2013	0759-2015	0759-2022
PARAGUAY	2245-0914	2233-0935	2206-0951	2135-1004	2114-1019	2108-1032
PERU	2340-1055	2337-1107	2322-1112	2303-1112	2252-1117	2252-1124
PHILIPPINES	0947-2224	1000-2220	1007-2203	1011-2141	1017-2128	1026-2126
POLAND	1454-0640	1548-0555	1641-0450	1736-0337	1828-0238	1903-0214
PORTUGAL	1728-0752	1810-0727	1842-0645	1913-0555	1941-0521	2002-0508
PUERTO RICO	2210-1100	2225-1053	2235-1032	2241-1007	2252-0950	2302-0948
QATAR	1407-0320	1428-0309	1443-0242	1457-0211	1511-0149	1525-0143
REUNION	1506-0150	1457-0208	1434-0220	1407-0228	1350-0239	1347-0250
RHODESIA	1647-0335	1638-0352	1616-0403	1550-0411	1533-0422	1530-0433
ROMANIA	1505-0547	1544-0516	1622-0427	1700-0331	1736-0249	1800-0232
RWANDA	1602-0357	1558-0355	1602-0359	1616-0405	1620-0402	1613-0405
SABAH	1020-2230	1028-2231	1027-2221	1023-2207	1023-2159	1029-2201
SAHARA SP	1820-0745	1844-0731	1902-0702	1919-0627	1936-0603	1951-0556
SAMOA	0601-1709	0556-1722	0539-1728	0519-1731	0506-1737	0505-1745
SAO TOME	1743-0550	1748-0553	1743-0543	1738-0533	1733-0533	1733-0533
SARAWAK	1050-2247	1056-2251	1051-2244	1044-2234	1042-2229	1046-2232
SAUDI ARABIA	1427-0340	1448-0329	1503-0302	1517-0231	1532-0209	1545-0203
SENEGAL	1901-0738	1914-0734	1921-0717	1925-0655	1931-0642	1940-0640
SEYCHELLES	1426-0230	1433-0232	1430-0244	1424-0212	1424-0205	1428-0208
SIERRA LEONE	1853-0712	1903-0712	1905-0659	1903-0642	1906-0633	1913-0634



JUL	AUG	SEP	OCT	NOV	DEC	GRID COORDINATE
1940-0338	1854-0421	1746-0512	1646-0554	1551-0645	1530-0729	6.30E 49.38N
1113-2150	1057-2203	1030-2213	1003-2221	0944-2236	0946-2256	113.35E 22.10N
2017-0607	1955-0628	1915-0650	1838-0710	1808-0738	1801-0804	16.44W 33.26N
1427-0325	1433-0310	1445-0244	1451-0221	1504-0204	1524-0207	47.37E 18.45S
1127-2310	1124-2310	1112-2304	1101-2257	1057-2257	1108-2309	101.46E 3.01N
1525-0407	1530-0356	1535-0334	1539-0313	1550-0259	1557-0303	35.02E 15.42S
1330-0108	1327-0109	1314-0105	1301-0059	1256-0100	1306-0112	71.30E 4.30N
1901-0612	1852-0618	1833-0620	1814-0621	1803-0628	1809-0644	7.58W 12.38N
1822-0358	1755-0422	1712-0446	1632-0509	1559-0538	1552-0607	13.55E 35.45N
0726-1845	0718-1850	0701-1850	0644-1848	0636-1853	0643-1908	165.00E 10.00N
2237-0942	2227-0949	2206-0952	2146-0955	2133-1004	2139-1021	61.00W 14.30N
1943-0636	1931-0646	1907-0652	1844-0657	1828-0708	1832-0727	16.00W 18.08N
1344-0245	1353-0230	1405-0204	1412-0141	1428-0123	1446-0125	57.31E 20.19S
0119-1209	0106-1217	0040-1224	0016-1231	2359-1244	0002-1303	99.09W 19.28N
0654-1702	0635-1725	0602-1741	0530-1755	0505-1815	0504-1840	179.00W 28.00N
1913-0357	1836-0428	1738-0511	1650-0542	1607-0622	1554-0658	7.26E 43.44N
1355-2159	1310-2242	1202-2330	1106-0011	1012-0101	0952-0142	92.00E 50.00N
2246-0942	2234-0951	2211-0956	2148-1000	2134-1011	2138-1029	62.00W 16.48N
1940-0526	1915-0548	1835-0610	1756-0630	1726-0657	1720-0725	6.47W 33.59N
1509-0446	1526-0426	1544-0347	1600-0314	1623-0248	1649-0244	32.22E 29.59S
0701-1854	0700-1853	0650-1843	0642-1834	0641-1831	0653-1843	167.00E .30S
1317-2331	1258-2348	1225-0004	1152-0019	1126-0040	1124-0105	85.20E 27.45N
2302-1015	2253-1021	2234-1022	2216-1022	2206-1029	2212-1045	68.19W 12.13N
0629-1931	0636-1916	0649-1848	0656-1826	0713-1804	0734-1805	166.26E 22.16S
0624-1917	0632-1904	0641-1840	0647-1818	0659-1802	0718-1805	168.33E 17.44S
0515-1939	0541-1909	0613-1819	0640-1734	0716-1654	0750-1643	174.50E 41.05S
0014-1127	0005-1133	2346-1134	2328-1134	2318-1141	2324-1157	86.16W 12.10N
1824-0531	1814-0538	1754-0541	1734-0542	1722-0550	1729-0607	2.06E 13.30N
1805-0534	1759-0537	1744-0534	1730-0530	1723-0533	1732-0548	3.56E 7.23N
0601-1943	0623-1924	0641-1844	0657-1812	0728-1746	0743-1744	167.56E 29.03S
2037-0219	1916-0316	1732-0448	1616-0549	1514-0703	1421-0803	10.58E 59.11N
1454-0143	1441-0141	1416-0200	1352-0206	1336-0219	1339-0238	56.45E 18.50N
1424-0050	1407-0105	1337-0118	1307-0129	1246-0147	1246-0209	67.00E 24.55N
2342-1105	2335-1109	2319-1108	2303-1106	2255-1110	2303-1125	79.30W 9.00N
0807-2026	0810-2020	0809-2004	0806-1948	0811-1939	0826-1947	147.20E 9.34S
2117-1033	2132-1018	2144-0947	2155-0917	2214-0855	2236-0855	57.30W 25.25S
2259-1128	2304-1120	2305-1102	2305-1044	2312-1033	2328-1038	76.55W 12.06S
1029-2134	1019-2141	0958-2144	0938-2147	0925-2156	0931-2213	120.58E 14.42N
1847-0237	1757-0322	1649-0415	1541-0459	1443-0602	1417-0641	20.52E 52.04N
2001-0519	1931-0547	1845-0616	1800-0642	1723-0715	1714-0745	8.40W 38.45N
2300-1000	2243-1015	2225-1015	2211-1018	2149-1029	2153-1048	66.10W 18.30N
1526-0152	1509-0207	1439-0220	1409-0231	1348-0249	1348-0311	51.30E 25.12N
1353-0254	1405-0240	1413-0214	1421-0148	1435-0130	1455-0130	55.30E 20.55S
1535-0436	1544-0421	1556-0355	1603-0332	1619-0314	1637-0316	29.51E 19.26S
1759-0243	1722-0314	1624-0357	1546-0428	1453-0508	1440-0544	26.06E 44.25N
1606-0402	1558-0403	1600-0350	1551-0342	1551-0338	1603-0346	30.04E 1.57S
1031-2207	1023-2215	1015-2205	1002-2201	0956-2203	1004-2216	116.14E 6.12N
1951-0605	1932-0622	1859-0638	1826-0653	1800-0714	1758-0739	13.12W 27.10N
0512-1749	0519-1739	0521-1719	0523-1659	0532-1647	0549-1652	170.45W 14.15S
1743-0533	1733-0533	1733-0523	1718-0518	1713-0518	1733-0523	6.44E .16N
1051-2238	1049-2237	1038-2230	1028-2223	1025-2222	1036-2233	110.20E 1.33N
1544-0216	1524-0231	1454-0244	1429-0251	1408-0309	1408-0331	46.23E 24.30N
1943-0648	1933-0655	1912-0658	1852-0701	1839-0710	1845-0727	17.26W 14.39N
1418-0225	1413-0225	1418-0216	1410-0159	1411-0153	1424-0158	55.28E 4.36S
1916-0641	1910-0644	1854-0643	1838-0641	1831-0641	1839-0700	13.14W 8.30N

COUNTRY	JAN	FEB	MAR	APR	MAY	JUN
SINGAPORE	1116-2313	1122-2317	1117-2310	1110-2300	1108-2255	1112-2258
SOLOMON ISL	0748-1912	0746-1922	0734-1924	0717-1922	0708-1924	0708-1931
SOMALIA	1511-0308	1517-0312	1512-0305	1505-0255	1503-0250	1507-0253
SOUTH AFRICA	1702-0331	1650-0352	1623-0408	1552-0421	1531-0436	1525-0449
SPAIN	1654-0744	1744-0714	1814-0634	1844-0544	1924-0514	1944-0444
SRI LANKA	1243-0056	1252-0057	1252-0046	1248-0031	1250-0023	1256-0025
ST HELENA	1902-0604	1856-0617	1838-0626	1805-0630	1801-0638	1800-0647
ST KITTS	2157-1033	2212-1036	2220-1017	2226-0954	2235-0938	2244-0936
ST LUCIA	2119-1032	2208-1028	2215-1011	2219-0950	2225-0936	2234-0934
SUDAN	1541-0419	1554-0414	1601-0357	1605-0335	1611-0321	1621-0319
SURINAM	2154-0958	2201-1000	2158-0952	2152-0940	2152-0933	2156-0936
SWAZILAND	1652-0321	1640-0342	1613-0358	1542-0411	1521-0426	1515-0439
SWEEDEN	1500-0730	1604-0634	1708-0519	1814-0355	1916-0245	1959-0211
SWITZERLAND	1609-0711	1635-0636	1736-0642	1819-0540	1859-0353	1927-0334
SYRIA	1451-0438	1519-0420	1543-0344	1609-0300	1629-0234	1647-0225
TAHITI	0846-1941	0839-1957	0819-2007	0755-2013	0739-2022	0737-2032
TAIWAN	0927-2240	0948-2229	1003-2202	1017-2131	1032-2109	1045-2103
TANZANIA	1616-0320	1546-0328	1536-0327	1523-0323	1515-0323	1518-0329
THAILAND	1111-2345	1123-2341	1129-2325	1132-2304	1137-2251	1146-2249
TIMOR	1006-2130	1004-2140	0952-2142	0935-2140	0926-2142	0927-2149
TOGO	1800-0610	1808-0611	1807-0601	1803-0547	1803-0539	1809-0541
TONGO	0623-1708	0618-1727	0554-1740	0526-1750	0507-1802	0503-1814
TRINIDAD	2200-1028	2211-1025	2215-1010	2216-0951	2221-0940	2229-0940
TRISTAN CUNHA	2008-0548	1946-0619	1907-0647	1821-0723	1758-0745	1730-0800
TUNISIA	1629-0623	1658-0603	1724-0526	1749-0443	1813-0412	1831-0401
TURK & CAICOS	2224-1126	2242-1116	2255-1053	2305-1025	2317-1005	2329-1000
TURKEY	1427-0527	1527-0457	1557-0417	1627-0327	1707-0257	1727-0227
UGANDA	1556-0406	1601-0406	1556-0356	1551-0346	1546-0346	1546-0346
UNITED ARAB EM	1336-0325	1404-0306	1429-0230	1453-0149	1516-0119	1534-0109
UPPER VOLTA	1750-0618	1801-0615	1805-1600	1806-0541	1811-0530	1819-0529
URUGUAY	2302-0847	2241-0917	2204-0944	2121-1008	2051-1032	2040-1050
USA	2219-1218	2250-1157	2317-1119	2341-1035	0008-1002	0027-0951
USSR-MOSCOW	1325-0555	1429-0459	1533-0344	1639-0220	1741-0110	1824-0036
VATICAN	1606-0636	1643-0608	1718-0522	1752-0429	1825-0350	1848-0335
VENEZUELA	2225-1050	2236-1048	2240-1034	2240-1016	2244-1005	2251-1005
VIETNAM NORTH	1037-2336	1055-2327	1107-2305	1117-2237	1128-2219	1139-2215
VIETNAM SOUTH	1050-2315	1101-2313	1105-2259	1105-2241	1109-2230	1116-2230
VIRGIN ISL	2206-1054	2221-1047	2230-1027	2237-1003	2246-0946	2256-0944
WAKE ISL	0651-1929	0704-1924	0711-1907	0715-1845	0721-1831	0731-1829
YEMEN REP	1455-0333	1508-0328	1515-0311	1519-0249	1525-0235	1535-0233
YEMEN PDR	1456-0326	1507-0323	1512-0308	1514-0247	1519-0236	1527-0236
YUGOSLAVIA	1528-0610	1607-0539	1645-0450	1723-0354	1759-0312	1823-0255
ZAIRE	1718-0458	1720-0505	1711-0503	1659-0456	1653-0456	1656-0501
ZAMBIA	1644-0349	1639-0403	1622-0410	1600-0413	1546-0420	1546-0429

This space is provided for you to list the sunset-sunrise times for your own location. Enter GMT time in top line, local time in bottom line.

	JAN	FEB	MAR	APR	MAY	JUN
GMT						
LOCAL						

Local sunset-sunrise times can be learned through local newspapers, radio stations, or observations. Also it is possible to compute the times from a known site, as described on page three of this booklet.

JUL	AUG	SEP	OCT	NOV	DEC	GRID COORDINATE
1117-2304	1115-2303	1104-2256	1054-2249	1051-2248	1102-2259	103.42E 1.20N
0716-1935	0719-1929	0718-1913	0715-1857	0720-1848	0735-1856	160.03E 9.35S
1512-0259	1510-0258	1459-0251	1449-0244	1446-0243	1457-0254	45.06E 2.06N
1534-0450	1549-0435	1601-0404	1612-0334	1631-0312	1653-0312	28.08E 26.35S
1934-0459	1904-0529	1819-0559	1738-0622	1700-0656	1651-0728	3.31W 40.18N
1301-0030	1255-0033	1240-0030	1226-0026	1219-0029	1228-0044	79.54E 7.06N
1808-0650	1813-0639	1818-0617	1822-0556	1833-0542	1840-0546	5.42W 15.55S
2245-0945	2228-1000	2210-1000	2156-1003	2134-1014	2138-1033	62.25W 17.24N
2237-0942	2227-0949	2206-0952	2146-0955	2133-1004	2139-1021	61.00W 14.15N
1620-0327	1608-0342	1550-0340	1532-0341	1518-0350	1524-0407	32.28E 15.30N
2201-0938	2153-0946	2146-0936	2134-0931	2129-0931	2139-0944	56.30W 3.45N
1524-0440	1539-0425	1551-0354	1602-0324	1621-0302	1634-0302	30.48E 26.38S
1935-0245	1837-0337	1717-0440	1612-0531	1506-0632	1438-0721	13.44E 55.49N
1915-0355	1855-0430	1738-0512	1647-0545	1559-0630	1543-0708	7.24E 46.49N
1645-0235	1620-0257	1537-0322	1453-0340	1420-0412	1420-0437	36.18E 33.31N
0742-2035	0750-2022	0759-1958	0805-1936	0817-1920	0836-1913	149.00E 17.00S
1046-2121	1029-2127	0959-2140	0929-2151	0908-2209	0908-2231	121.24E 25.09N
1523-0331	1517-0331	1523-0316	1516-0302	1519-0256	1532-0305	39.14E 6.50S
1150-2257	1140-2304	1120-2307	1100-2308	1048-2308	1054-2333	100.29E 13.50N
0933-2148	0933-2148	0938-2131	0933-2115	0938-2107	0953-2114	125.34E 8.33S
1811-0547	1803-0555	1755-0545	1742-0541	1736-0543	1744-0556	1.12E 6.16N
0513-1815	0520-1800	0533-1732	0540-1710	0557-1648	0618-1649	174.30W 21.30S
2226-0946	2219-0953	2204-0954	2147-0953	2137-1001	2143-1014	61.00W 11.00N
1750-0758	1810-0738	1835-0648	1902-0606	1932-0533	2001-0525	12.00W 37.00S
1826-0416	1801-0438	1718-0503	1633-0521	1601-0553	1601-0618	10.53E 34.98N
2332-1009	2316-1022	2249-1032	2222-1040	2203-1055	2205-1115	71.10W 21.25N
1717-0242	1647-0312	1602-0342	1521-0405	1443-0439	1434-0511	30.42E 39.54N
1556-0346	1546-0346	1546-0336	1531-0331	1526-0331	1546-0336	32.36E .20N
1534-0120	1509-0142	1429-0204	1350-0224	1320-0251	1314-0319	54.38E 34.19N
1823-0536	1814-0542	1755-0543	1737-0543	1727-0550	1733-0606	1.31W 12.22N
2052-1049	2114-1025	2137-0944	2158-0904	2227-0832	2255-0825	56.10W 34.50S
0027-1003	0000-1027	2317-1051	2237-1114	2204-1143	2157-1212	77.22W 35.35N
1800-0110	1702-0202	1542-0305	1437-0356	1331-0457	1303-0546	37.37E 55.45N
1836-0351	1806-0421	1718-0454	1633-0521	1553-0558	1541-0631	12.22E 41.54N
2255-1012	2247-1017	2229-1017	2212-1017	2202-1022	2208-1038	66.58W 10.30N
1142-2224	1127-2235	1101-2244	1035-2252	1017-2306	1019-2325	105.50E 21.04N
1120-2237	1112-2242	1054-2242	1037-2242	1027-2247	1033-2303	106.40E 10.37N
2259-0952	2247-1002	2223-1008	2200-1013	2144-1024	2148-1043	64.56W 18.22N
0730-1831	0718-1852	0700-1850	0642-1851	0628-1900	0634-1917	165.00E 15.30N
1534-0241	1522-0256	1504-0254	1446-0255	1432-0304	1438-0321	44.00E 15.45N
1531-0242	1522-0248	1503-0250	1444-0251	1433-0258	1439-0344	44.54E 12.45N
1822-0306	1745-0337	1647-0420	1559-0451	1516-0531	1503-0607	20.09E 44.30N
1701-0505	1702-0502	1656-0450	1650-0439	1651-0433	1705-0443	15.23E 4.23S
1553-0433	1600-0422	1603-0401	1606-0341	1615-0327	1633-0332	28.15E 15.30S

Note that some stations at some times of the year will have two periods of darkness in common with your location. One early and one late.

JUL	AUG	SEP	OCT	NOV	DEC	GRID COORDINATES

When you determine the best times to listen for a particular station, be certain it is broadcasting at that time. Use WRTVH, Club Bulletins, Radio DX Programs, or schedules from the station for reference.



THE OVERSEAS SERVICE OF RADIO MALAYSIA



**Rádio Nacional de Brasília**

**THE VOICE OF TURKEY**

**Radio Peking**



RADIO NEDERLAND WERELDOMROEP  
P.O. BOX 222  
HILVERSUM (THE NETHERLANDS)

**NIPPON HOSO KYOKAI**

**RADIO KOREA**

Korean Broadcasting System  
8, YEJANG-DONG, CHUNG-KU,  
SEOUL, KOREA

# SPEEDX

SOCIETY TO PRESERVE THE ENGROSSING ENJOYMENT OF DXING

SPEEDX publishes a 48 page off set printed monthly magazine for Shortwave Listeners & Utility DXers. Features include loggings from around the world, QSL reports including photos, feature articles, technical articles, plus loggings & QSLs from the Utility bands. For a sample copy send \$1.00 US, or 6 IRC's, to: SPEEDX, P.O. Box E, ELSINORE, CALIFORNIA 92330 USA.

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**Don't fish around**

**for stations...**

**find them in**

**SPEEDX**



# USING THE SINPO CODE

by Jack White

The SINPO code is intended as a means of presenting a fairly accurate and non-technical evaluation of received radio signal quality. Four principal components or possible degrading elements considered important to audience understanding or enjoyment of the actual program content are each graded on a scale of 1 to 5, and then summed up into a fifth overall factor.

Despite a few rather persistent beliefs held in some SWling circles, SINPO was never intended to be a detailed critique involving specific technical terms. When a broadcaster desires this sort of information, prior arrangements are made with regular monitors that have been especially selected for the purpose and who have the necessary skill and equipment to prepare a report in whatever exact terms may be specified. In fact, it is not at all uncommon for the engineering staff of one international broadcaster to serve as a technical monitor for their counterparts in other parts of the world. Since most reports from SWls are received on a random basis, the broadcaster must consider them as being spontaneous response from the listening audience and upon receiving them, will naturally be more concerned with how easy (or difficult) it is for the average listener with average equipment to concentrate upon the actual programming...which is really what the whole thing is all about anyway.

For the DXer submitting an unsolicited reception report, the responsibility for sending useful information then lies in fairly and accurately relating conditions as they effect the serious listener's capability to receive a particular broadcast within acceptable standards of fidelity. Considered in this light, SINPO is quite ample in itself, and offers sufficient grading options so that only very occasionally any supplemental (and often quite confusing to the broadcaster) technical comments are required.



**SPEEDX**  
PO Box E  
Elsinore, CA 92330 USA

S		I		N		P		O	
SIGNAL STRENGTH		INTERFERENCE		NOISE		PROPAGATION (FADING)		OVERALL MERIT	
5	Very Strong	5	Nil	5	Nil	5	Nil	5	Excellent
4	Strong	4	Slight	4	Slight	4	Slight	4	Good
3	Fair	3	Moderate	3	Moderate	3	Moderate	3	Fair
2	Weak	2	Severe	2	Severe	2	Severe	2	Poor
1	Very Weak	1	Extreme	1	Extreme	1	Extreme	1	Unusable

**S** SIGNAL STRENGTH: This pertains to the amount of radio signal energy actually captured by the receiving station, and the term is self-explanatory for the most part. The 1 to 5 scale offers the possibility of stating signal strength ranging from almost nil to something approaching that of a local high-powered station with several degrees in between.

To be considered complete, a good reception report should always somewhere include information concerning the make and model of receiver as well as the type of antenna used. By combining this data with the SINPO "S" rating, the broadcaster has little difficulty in determining how well the signal is being received by most of the audience. A "4" (or "good") "S" grade from someone with a quite modest receiving set-up would tend to indicate the broadcast was readily available to most listeners; while a "2" (or "poor") rating from an SWL with highly sophisticated equipment would mean that much of the potential audience was probably lost. A simple deduction from a simply stated evaluation.

Quite often SWLs will include S-meter readings as a supplement to a SINPO report. This practice only tends to confuse the report for the broadcaster receiving it, and in reality is of little or no value unless accompanied by a number of qualifications!! S-9 (or center scale) usually is the arbitrary reference, but this value is by no means standard and is most often defined as the optimum comfortable level for the ears of the individual listener (a rather broad possible span in itself). In addition, to be accurate, zero on the S-meter scale must represent either the exact cut-off point between silence and audible sound, or the precise level at which a signal becomes discernable above whatever noise is present. Therefore, in order to properly relate signal strength in technical terms, the S-meter must be adjusted to one or the other of these zero references for each logging. (Not many accomplished SWLs even know where the zero-adjust potentiometer is located on their set, let alone take the time to reset it with each band change). Other considerations such as the sensitivity and gain capabilities of the particular receiver also enter the picture, and these are often manipulated with variable controls...again requiring that standard references must be established to provide information of significant value. When a single word or its numerical equivalent will accomplish the desired result, it seems unnecessary, or even redundant, to comment further and risk misinterpretation.

**I** INTERFERENCE: As used in the code, this refers to "man-made" interference from other radio transmissions. The increasing problem of more and more stations operating within allocated limits makes this particular observation quite important in many cases; especially when more than one geographic area is the intended target for a certain broadcast. Again sufficient description (of degrading effects) can be obtained from the rating scale with no further technical detail required. To actually measure interference (sometimes called "QRM"), such receiver variables as adjacent signal rejection capabilities and bandpass widths must be adequately defined beforehand.

However, it is of prime importance to include all possible information that can be determined about the station that is causing the interference! If the overall situation is considered severe enough, the broadcaster may elect to revise scheduling or perhaps contact the interfering station directly concerning the matter. Therefore, when QRM is observed, information as to the other station's identity and operating frequency is of considerable value and should be noted as a supplement to the SINPO evaluation. When two stations are operating at or very near the same frequency, an audio "beat" resembling a whistle develops (called a "heterodyne"). In such a circumstance it may be difficult to determine very much about the interfering station, but the fact should be reported anyway.