

	0"	3"	6"	9"	12"	15"	18"	21"	24"	27"	30"	33"	36"	39"	42"	45"	48"	51"	54"	57"
0'	0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57
1'	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	111	114	117
2'	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162	165	168	171	174	177
3'	180	183	186	189	192	195	198	201	204	207	210	213	216	219	222	225	228	231	234	237
4'	240	243	246	249	252	255	258	261	264	267	270	273	276	279	282	285	288	291	294	297
5'	300	303	306	309	312	315	318	321	324	327	330	333	336	339	342	345	348	351	354	357
6'	360	363	366	369	372	375	378	381	384	387	390	393	396	399	402	405	408	411	414	417
7'	420	423	426	429	432	435	438	441	444	447	450	453	456	459	462	465	468	471	474	477
8'	480	483	486	489	492	495	498	501	504	507	510	513	516	519	522	525	528	531	534	537
9'	540	543	546	549	552	555	558	561	564	567	570	573	576	579	582	585	588	591	594	597
10'	600	603	606	609	612	615	618	621	624	627	630	633	636	639	642	645	648	651	654	657
11'	660	663	666	669	672	675	678	681	684	687	690	693	696	699	702	705	708	711	714	717
12'	720	723	726	729	732	735	738	741	744	747	750	753	756	759	762	765	768	771	774	777
13'	780	783	786	789	792	795	798	801	804	807	810	813	816	819	822	825	828	831	834	837
14'	840	843	846	849	852	855	858	861	864	867	870	873	876	879	882	885	888	891	894	897
15'	900	903	906	909	912	915	918	921	924	927	930	933	936	939	942	945	948	951	954	957
16'	960	963	966	969	972	975	978	981	984	987	990	993	996	999	1002	1005	1008	1011	1014	1017
17'	1020	1023	1026	1029	1032	1035	1038	1041	1044	1047	1050	1053	1056	1059	1062	1065	1068	1071	1074	1077
18'	1080	1083	1086	1089	1092	1095	1098	1101	1104	1107	1110	1113	1116	1119	1122	1125	1128	1131	1134	1137
19'	1140	1143	1146	1149	1152	1155	1158	1161	1164	1167	1170	1173	1176	1179	1182	1185	1188	1191	1194	1197
20'	1200	1203	1206	1209	1212	1215	1218	1221	1224	1227	1230	1233	1236	1239	1242	1245	1248	1251	1254	1257
21'	1260	1263	1266	1269	1272	1275	1278	1281	1284	1287	1290	1293	1296	1299	1302	1305	1308	1311	1314	1317
22'	1320	1323	1326	1329	1332	1335	1338	1341	1344	1347	1350	1353	1356	1359	1362	1365	1368	1371	1374	1377
23'	1380	1383	1386	1389	1392	1395	1398	1401	1404	1407	1410	1413	1416	1419	1422	1425	1428	1431	1434	1437
24'	1440	1443	1446	1449	1452	1455	1458	1461	1464	1467	1470	1473	1476	1479	1482	1485	1488	1491	1494	1497
25'	1500	1503	1506	1509	1512	1515	1518	1521	1524	1527	1530	1533	1536	1539	1542	1545	1548	1551	1554	1557
26'	1560	1563	1566	1569	1572	1575	1578	1581	1584	1587	1590	1593	1596	1599	1602	1605	1608	1611	1614	1617
27'	1620	1623	1626	1629	1632	1635	1638	1641	1644	1647	1650	1653	1656	1659	1662	1665	1668	1671	1674	1677
28'	1680	1683	1686	1689	1692	1695	1698	1701	1704	1707	1710	1713	1716	1719	1722	1725	1728	1731	1734	1737
29'	1740	1743	1746	1749	1752	1755	1758	1761	1764	1767	1770	1773	1776	1779	1782	1785	1788	1791	1794	1797
30'	1800	1803	1806	1809	1812	1815	1818	1821	1824	1827	1830	1833	1836	1839	1842	1845	1848	1851	1854	1857
31'	1860	1863	1866	1869	1872	1875	1878	1881	1884	1887	1890	1893	1896	1899	1902	1905	1908	1911	1914	1917
32'	1920	1923	1926	1929	1932	1935	1938	1941	1944	1947	1950	1953	1956	1959	1962	1965	1968	1971	1974	1977
33'	1980	1983	1986	1989	1992	1995	1998	2001	2004	2007	2010	2013	2016	2019	2022	2025	2028	2031	2034	2037
34'	2040	2043	2046	2049	2052	2055	2058	2061	2064	2067	2070	2073	2076	2079	2082	2085	2088	2091	2094	2097
35'	2100	2103	2106	2109	2112	2115	2118	2121	2124	2127	2130	2133	2136	2139	2142	2145	2148	2151	2154	2157
36'	2160	2163	2166	2169	2172	2175	2178	2181	2184	2187	2190	2193	2196	2199	2202	2205	2208	2211	2214	2217
37'	2220	2223	2226	2229	2232	2235	2238	2241	2244	2247	2250	2253	2256	2259	2262	2265	2268	2271	2274	2277
38'	2280	2283	2286	2289	2292	2295	2298	2301	2304	2307	2310	2313	2316	2319	2322	2325	2328	2331	2334	2337
39'	2340	2343	2346	2349	2352	2355	2358	2361	2364	2367	2370	2373	2376	2379	2382	2385	2388	2391	2394	2397
40'	2400	2403	2406	2409	2412	2415	2418	2421	2424	2427	2430	2433	2436	2439	2442	2445	2448	2451	2454	2457
41'	2460	2463	2466	2469	2472	2475	2478	2481	2484	2487	2490	2493	2496	2499	2502	2505	2508	2511	2514	2517
42'	2520	2523	2526	2529	2532	2535	2538	2541	2544	2547	2550	2553	2556	2559	2562	2565	2568	2571	2574	2577
43'	2580	2583	2586	2589	2592	2595	2598	2601	2604	2607	2610	2613	2616	2619	2622	2625	2628	2631	2634	2637
44'	2640	2643	2646	2649	2652	2655	2658	2661	2664	2667	2670	2673	2676	2679	2682	2685	2688	2691	2694	2697
45'	2700	2703	2706	2709	2712	2715	2718	2721	2724	2727	2730	2733	2736	2739	2742	2745	2748	2751	2754	2757
46'	2760	2763	2766	2769	2772	2775	2778	2781	2784	2787	2790	2793	2796	2799	2802	2805	2808	2811	2814	2817
47'	2820	2823	2826	2829	2832	2835	2838	2841	2844	2847	2850	2853	2856	2859	2862	2865	2868	2871	2874	2877
48'	2880	2883	2886	2889	2892	2895	2898	2901	2904	2907	2910	2913	2916	2919	2922	2925	2928	2931	2934	2937
49'	2940	2943	2946	2949	2952	2955	2958	2961	2964	2967	2970	2973	2976	2979	2982	2985	2988	2991	2994	2997
50'	3000	3003	3006	3009	3012	3015	3018	3021	3024	3027	3030	3033	3036	3039	3042	3045	3048	3051	3054	3057
51'	3060	3063	3066	3069	3072	3075	3078	3081	3084	3087	3090	3093	3096	3099	3102	3105	3108	3111	3114	3117
52'	3120	3123	3126	3129	3132	3135	3138	3141	3144	3147	3150	3153	3156	3159	3162	3165	3168	3171	3174	3177
53'	3180	3183	3186	3189	3192	3195	3198	3201	3204	3207	3210	3213	3216	3219	3222	3225	3228	3231	3234	3237
54'	3240	3243	3246	3249	3252	3255	3258	3261	3264	3267	3270	3273	3276	3279	3282	3285	3288	3291	3294	3297
55'	3300	3303	3306	3309	3312	3315	3318	3321	3324	3327	3330	3333	3336	3339	3342	3345	3348	3351	3354	3357
56'	3360	3363	3366	3369	3372	3375	3378	3381	3384	3387	3390	3393	3396	3399	3402	3405	3408	3411	3414	3417
57'	3420	3423	3426	3429	3432	3435	3438	3441	3444	3447	3450	3453	3456	3459	3462	3465	3468	3471	3474	3477
58'	3480	3483	3486	3489	3492	3495	3498	3501	3504	3507	3510	3513	3516	3519	3522	3525	3528	3531	3534	3537
59'	3540	3543	3546	3549	3552	3555	3558	3561	3564	3567	3570	3573	3576	3579	3582	3585	3588	3591	3594	3597

1 January

Day	GHA Aries	Hour	Δ	Minute	Δ	Minute	Δ	Second	Δ	Second	Δ
1	+99°57'51"	0	+0°00'00"	0	+0°00'00"	30	+7°31'14"	0	+0°00'00"	30	+0°07'31"
2	+100°57'00"	1	+15°02'28"	1	+0°15'02"	31	+7°46'16"	1	+0°00'15"	31	+0°07'46"
3	+101°56'08"	2	+30°04'56"	2	+0°30'05"	32	+8°01'19"	2	+0°00'30"	32	+0°08'01"
4	+102°55'16"	3	+45°07'24"	3	+0°45'07"	33	+8°16'21"	3	+0°00'45"	33	+0°08'16"
5	+103°54'25"	4	+60°09'51"	4	+1°00'10"	34	+8°31'24"	4	+0°01'00"	34	+0°08'31"
6	+104°53'33"	5	+75°12'19"	5	+1°15'12"	35	+8°46'26"	5	+0°01'15"	35	+0°08'46"
7	+105°52'42"	6	+90°14'47"	6	+1°30'15"	36	+9°01'29"	6	+0°01'30"	36	+0°09'01"
8	+106°51'50"	7	+105°17'15"	7	+1°45'17"	37	+9°16'31"	7	+0°01'45"	37	+0°09'17"
9	+107°50'58"	8	+120°19'43"	8	+2°00'20"	38	+9°31'34"	8	+0°02'00"	38	+0°09'32"
10	+108°50'07"	9	+135°22'10"	9	+2°15'22"	39	+9°46'36"	9	+0°02'15"	39	+0°09'47"
11	+109°49'15"	10	+150°24'38"	10	+2°30'25"	40	+10°01'39"	10	+0°02'30"	40	+0°10'02"
12	+110°48'23"	11	+165°27'06"	11	+2°45'27"	41	+10°16'41"	11	+0°02'45"	41	+0°10'17"
13	+111°47'32"	12	+180°29'34"	12	+3°00'30"	42	+10°31'43"	12	+0°03'00"	42	+0°10'32"
14	+112°46'40"	13	+195°32'02"	13	+3°15'32"	43	+10°46'46"	13	+0°03'16"	43	+0°10'47"
15	+113°45'48"	14	+210°34'30"	14	+3°30'34"	44	+11°01'48"	14	+0°03'31"	44	+0°11'02"
16	+114°44'57"	15	+225°36'58"	15	+3°45'37"	45	+11°16'51"	15	+0°03'46"	45	+0°11'17"
17	+115°44'05"	16	+240°39'25"	16	+4°00'39"	46	+11°31'53"	16	+0°04'01"	46	+0°11'32"
18	+116°43'13"	17	+255°41'53"	17	+4°15'42"	47	+11°46'56"	17	+0°04'16"	47	+0°11'47"
19	+117°42'22"	18	+270°44'21"	18	+4°30'44"	48	+12°01'58"	18	+0°04'31"	48	+0°12'02"
20	+118°41'30"	19	+285°46'49"	19	+4°45'47"	49	+12°17'01"	19	+0°04'46"	49	+0°12'17"
21	+119°40'39"	20	+300°49'17"	20	+5°00'49"	50	+12°32'03"	20	+0°05'01"	50	+0°12'32"
22	+120°39'47"	21	+315°51'44"	21	+5°15'52"	51	+12°47'06"	21	+0°05'16"	51	+0°12'47"
23	+121°38'55"	22	+330°54'12"	22	+5°30'54"	52	+13°02'08"	22	+0°05'31"	52	+0°13'02"
24	+122°38'04"	23	+345°56'40"	23	+5°45'57"	53	+13°17'11"	23	+0°05'46"	53	+0°13'17"
25	+123°37'12"			24	+6°00'59"	54	+13°32'13"	24	+0°06'01"	54	+0°13'32"
26	+124°36'20"			25	+6°16'02"	55	+13°47'16"	25	+0°06'16"	55	+0°13'47"
27	+125°35'29"			26	+6°31'04"	56	+14°02'18"	26	+0°06'31"	56	+0°14'02"
28	+126°34'37"			27	+6°46'07"	57	+14°17'20"	27	+0°06'46"	57	+0°14'17"
29	+127°33'45"			28	+7°01'09"	58	+14°32'23"	28	+0°07'01"	58	+0°14'32"
30	+128°32'53"			29	+7°16'11"	59	+14°47'25"	29	+0°07'16"	59	+0°14'47"
31	+129°32'02"										

Year	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9
1800	+0°26'03"	+0°11'49"	-0°02'26"	-0°16'40"	-0°30'55"	+0°13'57"	-0°00'21"	-0°14'41"	-0°29'02"	+0°15'44"
1810	+0°01'19"	-0°13'05"	-0°27'30"	+0°17'14"	+0°02'51"	-0°11'30"	-0°25'50"	+0°19'01"	+0°04'44"	-0°09'30"
1820	-0°23'45"	+0°21'09"	+0°06'54"	-0°07'21"	-0°21'38"	+0°23'12"	+0°08'52"	-0°05'30"	-0°19'54"	+0°24'50"
1830	+0°10'26"	-0°03'59"	-0°18'23"	+0°26'23"	+0°12'03"	-0°02'16"	-0°16'34"	+0°28'19"	+0°14'04"	-0°00'10"
1840	-0°14'25"	+0°30'29"	+0°16'13"	+0°01'56"	-0°12'24"	+0°32'24"	+0°18'02"	+0°03'38"	-0°10'47"	+0°33'56"
1850	+0°19'32"	+0°05'09"	-0°09'13"	+0°35'35"	+0°21'17"	+0°07'00"	-0°07'15"	+0°37'39"	+0°23'25"	+0°09'10"
1860	-0°05'05"	+0°39'47"	+0°25'29"	+0°11'09"	-0°03'13"	+0°41'33"	+0°27'09"	+0°12'44"	-0°01'41"	+0°43'04"
1870	+0°28'41"	+0°14'19"	+0°00'00"	+0°44'51"	+0°30'35"	+0°16'20"	+0°02'06"	+0°47'00"	+0°32'45"	+0°18'29"
1880	+0°04'12"	+0°49'02"	+0°34'41"	+0°20'19"	+0°05'56"	-0°50'40"	+0°36'15"	+0°21'50"	+0°07'27"	+0°52'13"
1890	+0°37'52"	+0°23'34"	+0°09'17"	+0°54'10"	+0°39'55"	+0°25'41"	+0°11'26"	+0°56'20"	+0°42'03"	+0°27'46"
1900	+0°13'27"	-0°00'55"	-0°15'17"	-0°29'41"	-0°44'06"	+0°00'37"	-0°13'47"	-0°28'10"	-0°42'31"	+0°02'17"
1910	-0°12'00"	-0°26'17"	-0°40'32"	+0°04'22"	-0°09'52"	-0°24'07"	-0°38'23"	+0°06'29"	-0°07'49"	-0°22'09"
1920	-0°36'31"	+0°08'14"	-0°06'10"	-0°20'35"	-0°35'00"	+0°09'45"	-0°04'37"	-0°18'58"	-0°33'17"	+0°11'34"
1930	-0°02'42"	-0°16'57"	-0°31'11"	+0°13'43"	-0°00'32"	-0°14'48"	-0°29'05"	+0°15'45"	+0°01'24"	-0°12'59"
1940	-0°27'22"	+0°17'21"	+0°02'56"	-0°11'28"	-0°25'51"	+0°18'56"	+0°04'35"	-0°09'43"	-0°24'00"	+0°20'53"
1950	+0°06'38"	-0°07'36"	-0°21'50"	-0°23'03"	+0°08'47"	-0°05'31"	-0°19'51"	+0°24'56"	+0°10'33"	-0°03'51"
1960	-0°18'15"	+0°26'28"	+0°12'04"	-0°02'19"	-0°16'40"	+0°28'09"	+0°13'51"	-0°00'25"	-0°14'40"	+0°30'14"
1970	+0°16'00"	+0°01'45"	-0°12'30"	+0°32'21"	+0°18'02"	+0°03'42"	-0°10'40"	+0°34'05"	+0°19'41"	+0°05'16"
1980	-0°09'09"	+0°35'36"	+0°21'14"	+0°06'54"	-0°07'25"	+0°37'26"	+0°23'10"	+0°08'56"	-0°05'19"	+0°39'35"
1990	+0°25'21"	+0°11'05"	-0°03'13"	+0°41'36"	+0°27'15"	+0°12'52"	-0°01'32"	+0°43'12"	+0°28'48"	+0°14'23"
2000	+0°00'00"	+0°44'47"	+0°30'27"	+0°16'09"	+0°01'52"	+0°46'46"	+0°32'31"	+0°18'17"	+0°04'03"	+0°48'56"
2010	+0°34'39"	+0°20'21"	+0°06'01"	+0°50'48"	+0°36'25"	+0°22'00"	+0°07'36"	+0°52'19"	+0°37'55"	+0°23'33"
2020	+0°09'12"	+0°54'01"	+0°39'44"	+0°25'28"	+0°11'13"	+0°56'07"	+0°41'53"	+0°27'38"	+0°13'23"	+0°58'14"
2030	+0°43'55"	+0°29'34"	+0°15'12"	+0°59'57"	+0°45'32"	+0°31'07"	+0°16'43"	+1°01'28"	+0°47'06"	+0°32'46"
2040	+0°18'27"	+1°03'19"	+0°49'03"	+0°34'49"	+0°20'35"	+1°05'28"	+0°51'14"	+0°36'58"	+0°22'40"	+1°07'28"
2050	+0°53'07"	+0°38'45"	+0°24'20"	+1°09'04"	+0°54'39"	+0°40'15"	+0°25'52"	+1°10'39"	+0°56'20"	+0°42'02"
2060	+0°27'46"	+1°12'39"	+0°58'25"	+0°44'11"	+0°29'56"	+1°14'49"	+1°00'33"	+0°46'14"	+0°31'53"	+1°16'40"
2070	+1°02'17"	+0°47'52"	+0°33'27"	+1°18'11"	+1°03'48"	+0°49'25"	+0°35'05"	+1°19'55"	+1°05'38"	+0°51'22"
2080	+0°37'07"	+1°22'01"	+1°07'47"	+0°53'32"	+0°39'16"	+1°24'07"	+1°09'48"	+0°55'27"	+0°41'04"	+1°25'49"
2090	+1°11'25"	+0°57'00"	+0°42'35"	+1°27'21"	+1°12'59"	+0°58'39"	+0°44'21"	+1°29'13"	+1°14'58"	+1°00'43"
2100	+0°46'29"	+0°32'15"	+0°17'59"	+0°03'43"	-0°10'35"	+0°34'14"	+0°19'52"	+0°05'29"	-0°08'55"	+0°35'48"
2110	+0°21'24"	+0°07'00"	-0°07'23"	+0°37'25"	+0°23'05"	+0°08'48"	-0°05'28"	+0°39'25"	+0°25'11"	+0°10'57"
2120	-0°03'18"	+0°41'35"	+0°27'18"	+0°12'59"	-0°01'21"	+0°43'25"	+0°29'01"	+0°14'37"	+0°00'12"	+0°44'56"
2130	+0°30'33"	+0°16'11"	+0°01'50"	+0°46'40"	+0°32'24"	+0°18'08"	+0°03'53"	+0°48'47"	+0°34'33"	+0°20'18"
2140	+0°06'02"	+0°50'53"	+0°36'34"	+0°22'12"	+0°07'49"	+0°52'34"	+0°38'09"	+0°23'45"	+0°09'20"	+0°54'06"
2150	+0°39'45"	+0°25'25"	+0°11'07"	+0°55'59"	+0°41'44"	+0°27'30"	+0°13'16"	+0°58'10"	+0°43'54"	+0°29'37"
2160	+0°15'19"	+1°00'08"	+0°45'46"	+0°31'22"	+0°16'58"	+1°01'42"	+0°47'17"	+0°32'53"	+0°18'31"	+1°03'19"
2170	+0°49'00"	+0°34'43"	+0°20'27"	+1°05'21"	+0°51'06"	+0°36'52"	+0°22'38"	+1°07'30"	+0°53'13"	+0°38'54"
2180	+0°24'33"	+1°09'19"	+0°54'55"	+0°40'31"	+0°26'06"	+1°10'50"	+0°56'27"	+0°42'05"	+0°27'45"	+1°12'35"
2190	+0°58'18"	+0°44'04"	+0°29'49"	+1°14'43"	+1°00'29"	+0°46'14"	+0°31'58"	+1°16'48"	+1°02'28"	+0°48'07"

60 Rigel

Month	SHA		dec	
	SHA	Δ_{SHA}	dec	Δ_{dec}
1	+281°21'32"	0'	-8°12'39"	0'
2	+281°21'37"	5'	-8°12'42"	-3'
3	+281°21'44"	12'	-8°12'43"	-4'
4	+281°21'52"	20'	-8°12'42"	-3'
5	+281°21'55"	23'	-8°12'38"	1'
6	+281°21'53"	21'	-8°12'33"	6'
7	+281°21'45"	13'	-8°12'27"	12'
8	+281°21'33"	1'	-8°12'22"	17'
9	+281°21'20"	-12'	-8°12'19"	20'
10	+281°21'08"	-24'	-8°12'20"	19'
11	+281°20'57"	-35'	-8°12'24"	15'
12	+281°20'50"	-42'	-8°12'30"	9'

Linear corrections		
ΔY	SHA	dec
1	-43.29	+3.95
2	-86.58	+7.90
3	-129.87	+11.84
4	-173.16	+15.79
5	-216.45	+19.74
6	-259.74	+23.69
7	-303.03	+27.64
8	-346.32	+31.58
9	-389.61	+35.53
10	-432.90	+39.48

Quantiles		
Q	SHA	dec
25%	0.23	0.11
50%	0.45	0.24
75%	0.80	0.41
85%	1.11	0.50
95%	1.75	0.67
99%	2.79	0.83
100%	3.79	0.99

Non-linear corrections

SHA	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9
1800	+0	-5	-10	-15	-19	-22	-23	-22	-20	-16
1810	-12	-6	-1	+3	+6	+9	+9	+7	+4	+0
1820	-5	-10	-15	-18	-20	-20	-19	-16	-12	-8
1830	-2	+2	+6	+9	+11	+11	+8	+5	+0	-5
1840	-10	-14	-17	-19	-18	-16	-13	-9	-4	+1
1850	+6	+10	+12	+12	+12	+9	+5	+0	-5	-10
1860	-14	-16	-17	-17	-14	-10	-5	+0	+5	+10
1870	+13	+14	+14	+12	+9	+4	-1	-6	-9	-13
1880	-15	-15	-14	-11	-7	-2	+3	+8	+12	+15
1890	+15	+15	+13	+9	+4	-1	-6	-10	-13	-14
1900	-14	-12	-8	-4	+1	+6	+11	+14	+17	+17
1910	+16	+13	+8	+3	-2	-6	-10	-13	-13	-12
1920	-10	-6	-1	+4	+9	+13	+16	+17	+18	+16
1930	+12	+8	+2	-3	-7	-10	-12	-12	-11	-7
1940	-3	+2	+7	+12	+15	+18	+18	+17	+14	+10
1950	+6	+0	-4	-8	-11	-11	-11	-8	-5	+0
1960	+5	+10	+14	+17	+19	+19	+17	+14	+10	+5
1970	+0	-5	-9	-11	-11	-10	-7	-3	+2	+7
1980	+12	+16	+18	+19	+18	+16	+12	+8	+3	-2
1990	-6	-9	-11	-11	-9	-6	-1	+4	+9	+13
2000	+17	+19	+19	+18	+15	+11	+6	+1	-4	-8
2010	-10	-11	-10	-8	-4	+1	+6	+11	+15	+17
2020	+19	+18	+17	+13	+9	+4	-1	-5	-9	-11
2030	-11	-9	-6	-2	+3	+8	+12	+16	+18	+19
2040	+18	+15	+11	+7	+2	-3	-8	-10	-12	-11
2050	-9	-6	-1	+4	+8	+13	+16	+17	+17	+16
2060	+13	+9	+4	-1	-5	-9	-11	-11	-10	-8
2070	-4	+1	+5	+9	+13	+15	+16	+16	+14	+10
2080	+6	+1	-4	-8	-11	-12	-12	-10	-7	-3
2090	+1	+6	+10	+13	+15	+15	+14	+11	+7	+3
2100	-2	-6	-10	-12	-13	-12	-10	-7	-2	+1
2110	+6	+10	+12	+14	+14	+12	+9	+5	+0	-4
2120	-9	-12	-13	-15	-13	-11	-7	-3	+2	+6
2130	+10	+12	+13	+12	+10	+5	+1	-4	-8	-12
2140	-14	-15	-15	-13	-10	-6	-2	+2	+6	+8
2150	+10	+10	+9	+6	+2	-2	-6	-11	-15	-17
2160	-17	-16	-14	-11	-6	-2	+2	+5	+7	+8
2170	+8	+6	+3	-1	-6	-10	-14	-17	-19	-19
2180	-17	-15	-11	-7	-2	+0	+3	+5	+6	+5
2190	+2	-1	-5	-9	-14	-17	-20	-21	-20	-18

dec	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9
1800	-48	-46	-44	-43	-43	-45	-47	-49	-51	-53
1810	-55	-55	-54	-52	-50	-47	-43	-39	-36	-33
1820	-30	-29	-29	-30	-31	-33	-36	-38	-40	-41
1830	-41	-40	-39	-36	-32	-28	-25	-21	-18	-17
1840	-16	-16	-18	-19	-22	-25	-26	-29	-29	-28
1850	-28	-25	-22	-19	-14	-11	-8	-6	-5	-4
1860	-6	-7	-10	-12	-15	-16	-17	-18	-17	-16
1870	-13	-10	-6	-3	+1	+3	+5	+5	+5	+4
1880	+2	-1	-3	-6	-7	-9	-8	-8	-5	-3
1890	+1	+4	+7	+10	+12	+14	+14	+14	+12	+9
1900	+7	+4	+2	+0	-1	+0	+1	+4	+6	+9
1910	+13	+16	+18	+21	+21	+22	+20	+18	+16	+13
1920	+10	+8	+7	+6	+7	+8	+10	+13	+17	+20
1930	+23	+26	+27	+27	+26	+25	+23	+20	+17	+15
1940	+12	+11	+11	+12	+14	+17	+19	+24	+26	+29
1950	+31	+31	+32	+30	+28	+25	+22	+20	+18	+16
1960	+15	+15	+16	+19	+22	+25	+28	+31	+33	+34
1970	+35	+34	+33	+30	+27	+24	+21	+19	+17	+17
1980	+18	+20	+22	+25	+28	+31	+33	+35	+36	+36
1990	+35	+33	+30	+27	+24	+21	+19	+18	+18	+19
2000	+21	+23	+26	+29	+32	+34	+36	+36	+36	+34
2010	+32	+29	+26	+23	+20	+19	+18	+18	+19	+21
2020	+24	+26	+29	+32	+34	+35	+35	+34	+32	+30
2030	+27	+23	+20	+18	+16	+16	+18	+20	+22	
2040	+26	+28	+31	+33	+32	+32	+30	+28	+25	+21
2050	+18	+16	+14	+13	+12	+13	+15	+18	+20	+23
2060	+26	+28	+28	+28	+27	+26	+22	+19	+16	+13
2070	+10	+8	+8	+7	+9	+11	+14	+16	+19	+21
2080	+22	+23	+23	+21	+19	+16	+12	+9	+5	+3
2090	+2	+1	+2	+4	+5	+8	+10	+13	+15	+16
2100	+16	+15	+13	+11	+7	+4	+0	-3	-5	-6
2110	-6	-6	-4	-2	+1	+3	+6	+7	+8	+7
2120	+6	+3	+1	-3	-6	-10	-12	-15	-15	-16
2130	-14	-13	-10	-7	-6	-3	-2	-2	-3	-4
2140	-8	-11	-15	-19	-21	-24	-25	-26	-26	-24
2150	-22	-19	-17	-16	-13	-13	-14	-15	-17	-21
2160	-24	-28	-32	-34	-37	-38	-38	-37	-36	-33
2170	-31	-29	-27	-26	-26	-27	-28	-31	-35	-38
2180	-42	-46	-49	-50	-51	-51	-51	-48	-46	-44
2190	-42	-41	-39	-40	-41	-44	-47	-50	-54	-58