

TABLE 2.

TIME CORRECTIONS to determine approximately the New Zealand Civil Mean Time of Sun on any other Meridian in New Zealand.

Longitude East of Greenwich.	Corrections.	Longitude East of Greenwich.	Corrections.
	h. m. s.		h. m. s.
168° ..	+ 0 27 4.27	174° ..	+ 0 3 4.27
169° ..	+ 0 23 4.27	175° ..	- 0 0 55.73
170° ..	+ 0 19 4.27	176° ..	- 0 4 55.73
171° ..	+ 0 15 4.27	177° ..	- 0 8 55.73
172° ..	+ 0 11 4.27	178° ..	- 0 12 55.73
173° ..	+ 0 7 4.27	179° ..	- 0 16 55.73

These corrections are to be applied to the times given in Table 1.

*Example.*—Required, time correction to determine approximately the New Zealand Civil mean time of sun on meridian of Gisborne Flagstaff. Longitude of Gisborne Flagstaff = 178° 1' 39".

Time correction from table for 178° =  $\frac{m. s.}{15}$  = -12 56 to nearest sec.  
 for 1' 39" =  $\frac{99''}{15}$  = - 0 7  
 Total correction = -13 3

In a similar way, the time correction for any other place can be determined, or it will be supplied on application to the Observatory. Table 3 contains a number of these corrections.

TABLE 3.

LIST of SELECTED POSITIONS, giving APPROXIMATE LONGITUDE and LATITUDE and CORRECTION to be applied to determine approximately New Zealand Civil Mean Time, when the Sun is on their Respective Meridians.

Place.	Approximate Longitude East of Greenwich.	Approximate South Latitude.	Authority.	Correction.
NORTH ISLAND.				
	h. m. s.	° '		m. s.
Cape Maria van Diemen ..	11 30 35	34 27	10-mile map ..	+ 8 29
Auckland (Mt. Eden) ..	11 39 05	36 53	Survey Department ..	- 0 01
Thames ..	11 42 15	37 7	10-mile map ..	- 3 09
Tauranga ..	11 44 45	37 42	" ..	- 5 41
East Cape Island ..	11 54 20	37 42	" ..	- 15 16
Tokomaru Bay ..	11 53 20	38 8	" ..	- 14 16
Gisborne (Flagstaff) ..	11 52 07	38 40	N.Z. Nautical Almanac ..	- 13 03
Napier (Lighthouse) ..	11 47 42	39 29	" ..	- 8 38
Cape Palliser Lighthouse ..	11 41 15	41 37	10-mile map ..	- 2 11
Wellington (Hector Observatory) ..	11 39 04	41 17	" ..	0 00
Wanganui (Lighthouse) ..	11 39 58	39 57	N.Z. Nautical Almanac ..	- 0 54
Patea ..	11 37 55	39 45	10-mile map ..	+ 1 09
New Plymouth (Flagstaff) ..	11 36 07	39 3	N.Z. Nautical Almanac ..	+ 2 57
Waitara ..	11 36 55	38 59	" ..	+ 2 09
Kaipara (North Head) ..	11 36 30	36 24	10-mile map ..	+ 2 34
SOUTH ISLAND.				
Nelson (Magazine) ..	11 33 03	41 16	N.Z. Nautical Almanac ..	+ 6 01
Picton (North End of Wharf) ..	11 36 02	41 17	" ..	+ 3 02
Blenheim ..	11 35 50	41 31	10-mile map ..	+ 3 14
Kaikoura ..	11 34 50	42 25	" ..	+ 4 14
Christchurch (Magnetic Observatory) ..	11 30 25	43 32	Survey Department ..	+ 8 39
Lyttelton (Customhouse) ..	11 30 57	43 37	N.Z. Nautical Almanac ..	+ 8 07
Akaroa ..	11 31 55	43 48	10-mile map ..	+ 7 09
Timaru (Lighthouse) ..	11 25 01	44 24	N.Z. Nautical Almanac ..	+ 4 03
Oamaru ..	11 23 50	45 7	" ..	+ 5 14
Port Chalmers (Observation Point) ..	11 22 31	45 49	Survey Department ..	+ 16 33
Dunedin ..	11 22 05	45 52	10-mile map ..	+ 16 59
Bluff (Observation Spot) ..	11 13 22	46 36	Survey Department ..	+ 25 42
Invercargill ..	11 13 25	46 26	10-mile map ..	+ 25 38
Abut Head ..	11 21 03	43 07	Survey Department ..	+ 18 01
Hokitika ..	11 23 55	42 43	10-mile map ..	+ 15 10
Greymouth (Flagstaff) ..	11 24 46	42 26	N.Z. Nautical Almanac ..	+ 14 18
Westport (Flagstaff) ..	11 26 21	41 44	" ..	+ 12 43

These corrections are to be applied to the times given in Table 1.

*Example.*—Required, New Zealand Civil mean time of sun on meridian of Gisborne Flagstaff on 1915, January 1.

New Zealand Civil mean time for 1915, January 1, from Table 1	=	h. m. s.
		11 54 0.72
Correction, from Table 3	=	- 0 13 3
New Zealand Civil mean time of sun on meridian of Gisborne Flagstaff on 1915, January 1	=	11 40 57.72

TIMES OF SUNRISE AND SUNSET.

To find the time of sunrise or sunset, take from Table 4 the semi-diurnal arc for the date and latitude of the place and apply it to the New Zealand Civil mean time of the sun on the meridian of the place.

*Example.*—Required, the times of sunrise and sunset at Gisborne Flagstaff, latitude 38° 40' south, on 1915, January 1.

N.Z.C.M.T. of sun on meridian of Gisborne Flagstaff on 1915, January 1	=	h. m.
		11 41
Semi-diurnal arc from Table 4	=	± 7 27
N.Z.C.M.T. of sunrise on 1915, January 1	=	4 14 a.m.
" sunset ..	=	19 8
	=	7 8 p.m.