

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 4 to 8 °E									
Correction to Latitude										Correction to Longitude									
4°	4°	5°	5°	6°	6°	7°	7°	8°	Longitude	4°	4°	5°	5°	6°	6°	7°	7°	8°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	0	0	-0.1	-0.1	0	0.1	0.1	-0.1	-0.3	
0	0	0	0	0	0	0	0	0	59° 45'	0.1	0	-0.1	-0.1	0	0.2	0.1	-0.1	-0.3	
0	0	0	0	0	0	0	0	0	59° 30'	0	0	-0.1	-0.1	0.1	0.2	0.1	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	59° 15'	0	0	-0.1	-0.1	0.1	0.2	0.1	-0.2	-0.3	
0	0	0	0	0	0	0	0.1	0	59° 0'	0	0	-0.1	0	0.1	0.2	0	-0.2	-0.3	
0	0	0	0	0	0.1	0.1	0.1	0.1	58° 45'	0	0	0	0	0.1	0.1	0	-0.2	-0.3	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	58° 30'	-0.1	0	0	0	0	0	-0.1	-0.2	-0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	58° 15'	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.2	-0.2	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	58° 0'	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	57° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	56° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	
0	0	0	0	0	0	0	0	0	56° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	55° 45'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	55° 30'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0	0.1	0.1	0	0	0	55° 15'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	55° 0'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0.1	0.1	0.1	54° 45'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0.1	54° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	54° 15'	0	-0.1	-0.1	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	54° 0'	0	-0.1	-0.1	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	0	
0	0	0	-0.1	-0.1	0	0	-0.1	-0.1	53° 45'	0	0	0	-0.1	-0.1	0	0	0	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 30'	0	0	0	-0.1	-0.1	0	0	0	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 15'	0	0	0	0	-0.1	0	0	0	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 0'	0	0	0	0	-0.1	0	0	0	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 45'	0	0	0	0	0	0	0	0	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	52° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	52° 0'	0	0	0	0	0	0	0	0	0	
0	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	51° 45'	0	0	0	0	0	0.1	0.1	0	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 30'	0	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 15'	0	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	51° 0'	0.1	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	50° 45'	0.1	0.1	0	0.1	0.1	0	0.1	0.1	0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	50° 30'	0.1	0.1	0.1	0.1	0.1	0	0	0.1	0	
0	0	0	0	0	-0.1	-0.1	0	0	50° 15'	0.1	0.1	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	50° 0'	0.1	0.1	0.1	0.1	0.1	0	0	0	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 8 to 12 °E									
Correction to Latitude										Correction to Longitude									
8°	8°	9°	9°	10°	10°	11°	11°	12°	Longitude	8°	8°	9°	9°	10°	10°	11°	11°	12°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.3	-0.4	-0.3	-0.2	-0.2	-0.2	-0.3	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	59° 45'	-0.3	-0.3	-0.2	-0.1	-0.2	-0.3	-0.3	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	59° 30'	-0.3	-0.3	-0.2	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	59° 15'	-0.3	-0.3	-0.2	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	59° 0'	-0.3	-0.2	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	58° 45'	-0.3	-0.2	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	58° 30'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	58° 15'	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	
0.1	0.1	0	0	0	0	0	0	0	58° 0'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	-0.1	0	0	57° 45'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	-0.1	-0.1	57° 30'	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	-0.1	57° 15'	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	56° 30'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	56° 15'	0	0	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	56° 0'	0	0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 45'	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 30'	0	0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 15'	0	0	0	0	-0.1	-0.2	-0.2	-0.1	-0.1	
0.1	0	0	0	0	0	0	0	0	55° 0'	0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0	0	0	0	0	0	0	54° 45'	0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0	0	0	0	0	0	0	0	54° 30'	0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 15'	0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	-0.1	-0.1	54° 0'	0	0	0	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	-0.1	53° 45'	0	0	0	0	0	0	0	0	-0.1	
-0.1	-0.1	0	0	-0.1	0	0	0	-0.1	53° 30'	0	0	0	0	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	53° 15'	0	0	0	0	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	53° 0'	0	0	0	0	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 45'	0	0	0	0	0	0	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 30'	0	0	-0.1	-0.1	0	0	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 15'	0	0	0	-0.1	0	0	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 0'	0	0	0	0	0	0	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 45'	0.1	0	0	0	0	0	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 30'	0.1	0	0	-0.1	0	0	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 15'	0.1	0	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	
0	0	0	-0.1	-0.1	0	0	-0.1	-0.1	51° 0'	0.1	0	-0.1	-0.1	0	-0.1	0	0	-0.1	
0	0	0	0	0	0	0	-0.1	-0.1	50° 45'	0.1	0	-0.1	0	0	-0.1	0	0	-0.1	
0	0	0	0	0	0	0	0	-0.1	50° 30'	0	0	0	0	-0.1	-0.1	0	0	-0.1	
0	0	0	0	0	0	0	0	0	50° 15'	0	0	0	0	-0.1	-0.1	0	0	-0.1	
0	0	0	0	0	0	0	0	0	50° 0'	-0.1	0	0	0	-0.1	-0.1	0	0	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 12 to 16 °E									
Correction to Latitude										Correction to Longitude									
12°	12°	13°	13°	14°	14°	15°	15°	16°	Longitude	12°	12°	13°	13°	14°	14°	15°	15°	16°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0.1	0.1	0	60° 0'	-0.4	-0.4	-0.3	-0.2	-0.1	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	59° 45'	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 30'	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	-0.1	-0.1	59° 15'	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	-0.1	-0.1	-0.1	59° 0'	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	-0.1	58° 45'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	-0.1	0	0	0	0	0	0	58° 30'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	58° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	58° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	57° 45'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.3	
-0.1	-0.1	-0.1	0	0	0	0	0	0	57° 30'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.2	-0.3	-0.3	
-0.1	-0.1	-0.1	0	0	0	0	0	0	57° 15'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.3	
0	0	-0.1	0	0	0	0	0	-0.1	57° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.3	
0	0	0	0	0	0	0	0	-0.1	56° 45'	0	-0.1	-0.2	-0.3	-0.2	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	56° 30'	0	0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	56° 15'	0	0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	0	0	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	55° 45'	-0.1	-0.1	0	-0.1	-0.2	-0.2	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	55° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	55° 15'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	-0.1	0	0	0	0	0	0	0	55° 0'	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 45'	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	0	-0.1	-0.1	
0	0	0	-0.1	-0.1	0	0	0	0	54° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	-0.1	-0.1	0	0	0	54° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	54° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	53° 45'	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	53° 30'	0	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	53° 15'	0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	53° 0'	0	-0.1	-0.2	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	
-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	52° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	52° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 45'	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 30'	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 15'	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	0	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	50° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	50° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 16 to 20 °E									
Correction to Latitude										Correction to Longitude									
16°	16°	17°	17°	18°	18°	19°	19°	20°	Longitude	16°	16°	17°	17°	18°	18°	19°	19°	20°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.3	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	59° 45'	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	59° 30'	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	
-0.1	0	0	0	0	0	0	0	0	59° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.2	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	59° 0'	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	58° 45'	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	
0	0	-0.1	0	0	0	0	0	0	58° 30'	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	58° 15'	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	58° 0'	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.1	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	57° 45'	-0.3	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	-0.2	-0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	57° 30'	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.3	-0.2	-0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	57° 15'	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	57° 0'	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	-0.1	-0.1	56° 45'	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	-0.1	-0.1	0	0	0	0	0	-0.1	56° 30'	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	-0.1	0	0	0	-0.1	-0.1	56° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	55° 45'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	55° 30'	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	-0.1	-0.1	-0.1	0	0	-0.1	55° 15'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	55° 0'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	54° 45'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	54° 30'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	-0.1	-0.1	54° 15'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	
0	0	0	0	0	0	0	0	-0.1	54° 0'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	-0.1	53° 45'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	0	0.1	0	
0	0	-0.1	-0.1	0	0	0	0	0	53° 30'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	0	0.1	0.1	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	53° 15'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	0	0.1	0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	53° 0'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	0	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 45'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	0	0	0	
-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 30'	-0.2	-0.1	-0.1	-0.2	-0.2	-0.1	0	0	0	
-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	52° 15'	-0.2	-0.2	-0.1	-0.2	-0.2	-0.1	0	0	0	
-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	52° 0'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	0	0	
-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	51° 45'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	51° 30'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	51° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	51° 0'	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.2	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 45'	-0.1	-0.1	-0.2	-0.1	0	-0.1	-0.1	-0.1	-0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 30'	0	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 15'	0	0	-0.1	-0.1	-0.1	0	-0.1	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 0'	0	0	0	-0.1	-0.1	0	-0.1	-0.2	-0.2	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 20 to 24 °E									
Correction to Latitude										Correction to Longitude									
20°	20°	21°	21°	22°	22°	23°	23°	24°	Longitude	20°	20°	21°	21°	22°	22°	23°	23°	24°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.1	0	0.1	0.1	0	0	0	-0.1	-0.1	
0	0	0	0.1	0	0	0	0	0	59° 45'	-0.1	0	0	0.1	0.1	0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 30'	-0.2	-0.1	0	0.1	0.2	0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 15'	-0.2	-0.2	-0.1	0.1	0.2	0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 0'	-0.2	-0.2	-0.1	0.1	0.2	0.1	0	0	-0.1	
0	0	-0.1	-0.1	0	0	0	0	0	58° 45'	-0.2	-0.2	0	0.1	0.2	0.1	0	0	0	
0	-0.1	-0.1	-0.1	0	0	0	0	0	58° 30'	-0.1	-0.1	0	0.1	0.1	0.1	0	0	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	58° 15'	-0.1	-0.1	0	0	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	58° 0'	-0.1	-0.1	0	0	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	57° 45'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	57° 30'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	57° 15'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	57° 0'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	56° 45'	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	56° 30'	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	0	0	0	0	0	0	0	0	56° 0'	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	0	0	0	0	0	0	0	0	55° 45'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	-0.1	-0.1	55° 30'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	55° 15'	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	55° 0'	-0.1	0	0	-0.1	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	54° 45'	-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	54° 30'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	54° 15'	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	54° 0'	0	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	53° 45'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	-0.1	-0.1	0	0	0	0	0	0	53° 30'	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	53° 15'	0.1	0	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	
0	0	0	0	0	0	0	0	0	53° 0'	0.1	0	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	
-0.1	0	0	0	0	0	0	0	0	52° 45'	0	0	-0.1	-0.1	-0.1	0	0	0	-0.1	
-0.1	0	0	0	0	0	0	0	0	52° 30'	0	0	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	52° 15'	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	52° 0'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	51° 45'	0	0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	51° 30'	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 15'	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 0'	0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.2	0	
-0.1	-0.1	0	0	0	0	0	-0.1	-0.1	50° 30'	-0.1	-0.1	-0.2	-0.1	-0.1	-0.2	-0.3	-0.2	0	
-0.1	0	0	0	0	0	0	0	0	50° 15'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	50° 0'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 24 to 28 °E									
Correction to Latitude										Correction to Longitude									
24°	24°	25°	25°	26°	26°	27°	27°	28°	Longitude	24°	24°	25°	25°	26°	26°	27°	27°	28°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	-0.1	-0.1	-0.1	0	59° 45'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	0	59° 30'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	59° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	59° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	58° 45'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	-0.1	-0.1	-0.1	0	0	58° 30'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	-0.1	-0.1	0	58° 15'	0	0	0	0	0	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	-0.1	-0.1	58° 0'	0	0	0	0	0	0	-0.1	-0.1	-0.1	
0	0	-0.1	-0.1	-0.1	0	0	0	0	57° 45'	0	0	0.1	0.1	0	0	-0.1	-0.1	-0.1	
0	0	-0.1	-0.1	-0.1	0	0	0	0	57° 30'	0	0.1	0.1	0.1	0	0	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	57° 15'	0	0.1	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	57° 0'	0	0	0.1	0	0	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	56° 45'	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	56° 30'	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	
0	0	-0.1	-0.1	-0.1	0	0	0	0	55° 45'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	55° 30'	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	55° 15'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	55° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	54° 45'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	54° 30'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
-0.1	0	0	0	0	0	0	0	0	54° 15'	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	54° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	53° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	53° 30'	-0.1	-0.1	-0.1	0	-0.1	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	53° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	53° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	52° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	-0.1	-0.1	-0.1	0	52° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 15'	-0.1	-0.1	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 0'	-0.1	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 45'	0	0	0	0	0	-0.1	-0.1	-0.2	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 30'	0	0	0	0	0	0	-0.1	-0.2	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 15'	0	0	0	0	0	0	-0.1	-0.2	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 0'	0	0	0	0	0.1	0	-0.1	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	50° 45'	0	0	0	0	0	0	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 30'	0	0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 15'	0	0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 0'	0	0.1	0.1	0	0	0	-0.1	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 28 to 32 °E									
Correction to Latitude										Correction to Longitude									
28°	28°	29°	29°	30°	30°	31°	31°	32°	Longitude	28°	28°	29°	29°	30°	30°	31°	31°	32°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	-0.1	0	0	0	0	0	0	60° 0'	0	0	0.1	0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	59° 45'	0	0	0	0	0	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	59° 30'	0	0	0	0	0	-0.1	-0.1	0	0	
0	0	0	0	0.1	0.1	0	0	0	59° 15'	0	0	0	0	-0.1	-0.1	0	0	0.1	
0	0	0	0	0.1	0	0	0	0	59° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	58° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	58° 30'	-0.1	-0.2	-0.2	-0.1	-0.1	0	0	0.1	0.1	
0	-0.1	-0.1	-0.1	0	0	0	0	0	58° 15'	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	58° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	
0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	57° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	57° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
0	0	0	-0.1	-0.1	0	0	0	0	57° 15'	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	57° 0'	-0.1	0	0	-0.1	-0.2	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	56° 45'	-0.1	0	0	-0.1	-0.2	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	56° 30'	-0.1	0	0	-0.1	-0.2	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	0	0	-0.1	-0.2	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.1	0	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	55° 45'	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	0	0	
0	-0.1	0	0	0	0	0	0	0	55° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
-0.1	-0.1	0	0	0	0	0	0	0	55° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	0	0	0	0	0	0	0	0	55° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	0	0	0	0	0	0	0	0	54° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 30'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 15'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 0'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	53° 45'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	53° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	-0.1	53° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	-0.1	-0.1	-0.1	53° 0'	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	0	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	52° 45'	-0.2	-0.2	-0.2	-0.1	0	0	0	-0.1	-0.1	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	52° 30'	-0.2	-0.2	-0.2	0	0.1	0.1	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	52° 15'	-0.2	-0.2	-0.1	0	0.2	0.1	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	52° 0'	-0.2	-0.2	-0.1	0.1	0.2	0.1	0	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 45'	-0.3	-0.2	-0.1	0.1	0.2	0.2	-0.1	-0.2	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	51° 30'	-0.3	-0.2	-0.1	0.1	0.2	0.1	0	-0.3	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	51° 15'	-0.3	-0.2	-0.1	0	0.1	0.1	0	-0.2	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	51° 0'	-0.2	-0.2	-0.1	-0.1	0	0	0	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	50° 45'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	50° 30'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	50° 15'	-0.1	-0.2	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	50° 0'	-0.1	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 32 to 36 °E									
Correction to Latitude										Correction to Longitude									
32°	32°	33°	33°	34°	34°	35°	35°	36°	Longitude	32°	32°	33°	33°	34°	34°	35°	35°	36°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	-0.1	60° 0'	0	0	0	0	0	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	-0.1	59° 45'	0	0	0	0	0	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 30'	0	0.1	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 15'	0.1	0.1	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 0'	0.1	0.2	0.2	0.1	0	-0.1	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	58° 45'	0.1	0.2	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0	0	0	58° 30'	0.1	0.1	0.1	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0.1	0.1	0.1	0	0	0	0	58° 15'	0.1	0	0	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0.1	0.1	58° 0'	0	0	0	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0.1	0.1	57° 45'	0	0	0	0	0	-0.1	-0.1	-0.1	0	
0	0	-0.1	-0.1	0	0	0	0	0	57° 30'	0	0	0	0	0	-0.1	-0.2	-0.1	0	
0	0	-0.1	-0.1	0	0	0	0	0	57° 15'	0	0	0	0	-0.1	-0.2	-0.2	-0.1	0	
0	0	0	0	0	0	0	0	0	57° 0'	0	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 45'	0	0.1	0	-0.1	-0.2	-0.2	-0.1	-0.1	0	
0	0	0	0	0	0	0	-0.1	-0.1	56° 30'	0	0.1	0	-0.1	-0.2	-0.2	-0.1	-0.1	0	
0	0	0	0	0	0	-0.1	-0.1	-0.1	56° 15'	0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	-0.1	0	56° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	55° 45'	0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	55° 30'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	55° 15'	-0.1	0	0	0	0	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	55° 0'	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	54° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	54° 30'	-0.1	-0.1	0	-0.1	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	54° 15'	-0.1	0	0	-0.1	-0.1	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 0'	-0.1	0	0	-0.1	-0.1	0	0	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	53° 45'	-0.1	0	0	-0.1	-0.1	0	0	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	53° 30'	-0.1	0	0	-0.1	0	0	-0.1	-0.2	-0.2	
-0.1	-0.1	0	0	0	0	0	0	0	53° 15'	0	0	0	-0.1	0	0	-0.1	-0.2	-0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	53° 0'	0	-0.1	-0.1	0	0	-0.1	-0.1	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	52° 45'	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.2	-0.2	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	52° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	52° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
-0.1	0	0	0	0	0	0	0	0	52° 0'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
-0.1	0	0	0	0	0	0	0	0	51° 45'	-0.3	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	
-0.1	0	0	0	0	0	0	0	0	51° 30'	-0.3	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	51° 15'	-0.3	-0.2	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	51° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	50° 45'	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	-0.1	0	0	0	0	50° 30'	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	-0.1	-0.1	0	0	0	50° 15'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.2	-0.1	-0.1	
0	0	0	0	0	-0.1	-0.1	0	0	50° 0'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.2	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N
Longitude 36 to 40 °E

Correction to Latitude
Correction to Longitude

Correction to Latitude										Correction to Longitude									
36° 0'	36° 30'	37° 0'	37° 30'	38° 0'	38° 30'	39° 0'	39° 30'	40° 0'	Longitude	36° 0'	36° 30'	37° 0'	37° 30'	38° 0'	38° 30'	39° 0'	39° 30'	40° 0'	Latitude
-0.1	-0.1	-0.1	0	0	0	0	-0.1	0	60° 0'	-0.3	-0.3	-0.2	0	0.1	0.1	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	59° 45'	-0.2	-0.2	-0.2	-0.1	0	0.1	0	-0.1	-0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	59° 30'	-0.1	-0.2	-0.2	-0.1	0	0	0	-0.1	-0.1	
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	59° 15'	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 0'	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	58° 45'	-0.1	-0.1	-0.1	-0.1	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	58° 30'	-0.1	-0.1	-0.1	-0.1	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0.1	0	58° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	
0.1	0	0	0	0	0	0	0	0	58° 0'	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0	0	0	0	0	0	0	0	57° 45'	0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 30'	0	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	57° 15'	0	0	0	0	-0.1	-0.1	0	0	-0.1	
0	0	0	0	0	-0.1	0	0	0	57° 0'	-0.1	0	0	0	-0.1	0	0	-0.1	-0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	56° 45'	0	0	0.1	0	0	-0.1	-0.1	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	56° 30'	0	0.1	0.1	0	-0.1	-0.1	-0.1	-0.2	-0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	56° 15'	0	0.1	0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0.1	0.1	0	0	0	56° 0'	0	0	0	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 45'	0	0	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 30'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 15'	0	0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 0'	0	0	0	-0.1	-0.2	-0.2	-0.2	-0.1	0	
0	0	0	0.1	0.1	0.1	0	0	0	54° 45'	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	54° 30'	0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	54° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	54° 0'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	53° 45'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	53° 30'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	53° 15'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	53° 0'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	52° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	52° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	52° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	52° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	51° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	51° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	51° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	51° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	50° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	50° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	50° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	50° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 40 to 44 °E									
Correction to Latitude										Correction to Longitude									
40°	40°	41°	41°	42°	42°	43°	43°	44°	Longitude	40°	40°	41°	41°	42°	42°	43°	43°	44°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	-0.1	-0.1	-0.1	0	0	60° 0'	0	0	0	0	0	0	0	0	-0.1	
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	59° 45'	-0.1	0	0	0	0	0	-0.1	-0.1	-0.1	
0	-0.1	-0.1	-0.1	-0.1	0	0	0	0	59° 30'	-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.2	
-0.1	-0.1	0	0	0	0	0	0	0	59° 15'	-0.1	0	0.1	0	-0.1	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 0'	-0.1	0	0	0	-0.1	-0.2	-0.2	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0	0	0	58° 45'	-0.1	-0.1	0	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	58° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0	0	0	0	0	0	58° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	58° 0'	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0.1	0.1	0	0	0	57° 45'	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0	0	0	57° 30'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0.1	0.1	0	0	0	0	57° 15'	-0.1	-0.1	-0.2	-0.2	-0.1	0	0	-0.1	0	
0	0	0	0	0	0	0	0	0	57° 0'	-0.1	-0.2	-0.2	-0.1	-0.1	0	0	-0.1	0	
0	0	0	0	0	0	0	0	0	56° 45'	-0.2	-0.2	-0.2	-0.1	-0.1	0	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	56° 30'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	
0	0	0	0	0	0	0	0.1	0	55° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	55° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	55° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	55° 0'	0	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	54° 45'	0	0	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	0	
0.1	0.1	0	0	0	0	0	0	0	54° 30'	0	0	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	0	
0.1	0.1	0.1	0	0	0	0	0	0	54° 15'	0	0	0	-0.2	-0.2	-0.1	-0.1	-0.1	0	
0	0.1	0.1	0.1	0	0	0	0	0	54° 0'	0	0	0	-0.1	-0.2	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	53° 45'	0	0	0	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0.1	0.1	53° 30'	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0.1	53° 15'	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	53° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	52° 45'	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	52° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	52° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	52° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	51° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	51° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	51° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	51° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	50° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	50° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	50° 15'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0.1	50° 0'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 44 to 48 °E									
Correction to Latitude										Correction to Longitude									
44°	44°	45°	45°	46°	46°	47°	47°	48°	Longitude	44°	44°	45°	45°	46°	46°	47°	47°	48°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0.1	0.1	0.1	0	0	0	0	60° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	
0	0.1	0.1	0.1	0	0	0	0	0	59° 45'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	59° 30'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	59° 15'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	59° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	58° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	58° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	58° 15'	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	58° 0'	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 45'	-0.1	0	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 30'	0	0	0.1	0	-0.1	-0.2	-0.1	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0	0	57° 15'	0	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0	0	57° 0'	0	0	0	-0.1	-0.1	-0.1	0	-0.1	-0.1	
0	0	0.1	0.1	0.1	0.1	0	0	0	56° 45'	0	0	-0.1	-0.1	-0.1	0	0	0	-0.1	
0	0	0.1	0.1	0	0	0	0	0	56° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0.1	56° 15'	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 45'	0	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 30'	0	0	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 15'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 45'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 30'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 15'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 0'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0.1	0.1	0	0	0	0.1	0.1	53° 45'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0	0	0	0	0	0	53° 30'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0	0	0	0	0	0	0	53° 15'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	53° 0'	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	52° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	52° 30'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	52° 15'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	52° 0'	-0.2	-0.2	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0.1	0.1	0.1	0.1	0.2	51° 45'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0.1	0.1	0.1	0.2	0.2	51° 30'	-0.1	-0.1	-0.2	-0.2	-0.3	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0.1	0.1	0.1	0.1	0.2	51° 15'	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	51° 0'	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 45'	-0.1	-0.2	-0.2	-0.3	-0.4	-0.3	-0.2	-0.2	-0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 30'	-0.1	-0.2	-0.2	-0.3	-0.4	-0.3	-0.2	-0.1	-0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	50° 15'	-0.2	-0.2	-0.3	-0.4	-0.4	-0.2	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	50° 0'	-0.2	-0.2	-0.3	-0.4	-0.4	-0.2	-0.1	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 52 to 56 °E									
Correction to Latitude										Correction to Longitude									
52°	52°	53°	53°	54°	54°	55°	55°	56°	Longitude	52°	52°	53°	53°	54°	54°	55°	55°	56°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 45'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 30'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 0'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	58° 45'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0.1	0.1	0.1	0.1	0	0	58° 30'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	58° 15'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	58° 0'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	57° 45'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	57° 30'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	57° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	57° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	56° 45'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	56° 30'	-0.2	-0.2	-0.3	-0.2	-0.2	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	56° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	55° 45'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0.1	55° 30'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0.1	55° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0.1	55° 0'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0.1	54° 45'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.2	
0	0	0	0	0.1	0	0	0.1	0.1	54° 30'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.2	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	54° 15'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0	0	54° 0'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	53° 45'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	53° 30'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0.1	0.1	0	0	0	0	0	0	0	53° 15'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.2	-0.1	
0.1	0.1	0.1	0	0	0	0	0	0.1	53° 0'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	52° 45'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	52° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	52° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.2	-0.1	
0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	52° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	51° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	51° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	51° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0	0	0	0	0	0	0	0	50° 30'	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	-0.1	-0.1	-0.1	0	0	50° 15'	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	
0	0	0	0	-0.1	-0.1	0	0	0	50° 0'	-0.1	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 56 to 60 °E									
Correction to Latitude										Correction to Longitude									
56°	56°	57°	57°	58°	58°	59°	59°	60°	Longitude	56°	56°	57°	57°	58°	58°	59°	59°	60°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.2	-0.2	-0.1	-0.1	0	0.1	0	-0.1	-0.4	
0	0	0	0	0	0	0	0	0	59° 45'	-0.2	-0.2	-0.1	-0.1	0	0.1	0	-0.2	-0.4	
0	0	0	0	0	0	0	0	0	59° 30'	-0.2	-0.2	-0.1	-0.1	0	0.1	0	-0.2	-0.4	
0	0	0	0	0	0	0	0	0	59° 15'	-0.2	-0.2	-0.1	-0.1	0	0	0	-0.2	-0.4	
0	0	0	0	0	0	0	0	0	59° 0'	-0.2	-0.1	-0.1	-0.1	0	0	0	-0.2	-0.4	
0	0	0	0	0	0	0	0	0	58° 45'	-0.2	-0.1	-0.1	-0.1	-0.1	0	0	-0.2	-0.4	
0	0	0	0	0	0.1	0.1	0	0	58° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.3	
0.1	0.1	0	0	0.1	0.1	0.1	0	0	58° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	58° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	57° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.2	
0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	0.1	57° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.2	
0.1	0.1	0	0	0	0	0	0.1	0.1	57° 15'	0	0	-0.1	-0.1	-0.1	-0.1	0	0	-0.2	
0.1	0.1	0	0	0	0	0	0	0	57° 0'	0	0	0	-0.1	-0.1	-0.1	0	-0.1	-0.2	
0.1	0.1	0	0	0	0	0	0	0	56° 45'	0	0	0	-0.1	-0.1	-0.1	0	0	-0.2	
0	0.1	0.1	0	0	0	0	0	0	56° 30'	0	0	0	0	-0.1	-0.1	0	0	-0.1	
0	0.1	0.1	0.1	0	0	0	0	0	56° 15'	0	0	0	0	-0.1	-0.1	0	0	-0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	56° 0'	0	0	0	0	-0.1	-0.1	0	0	-0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	55° 45'	-0.1	0	0	0	-0.1	-0.1	0	0	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0.1	55° 30'	-0.1	-0.1	0	0	-0.1	0	0.1	0	-0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	55° 15'	-0.1	-0.1	0	0	0	0	0.1	0	-0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0.1	55° 0'	-0.2	-0.1	0	0	0.1	0.1	0.1	-0.1	-0.2	
0.1	0.1	0.1	0	0	0	0	0.1	0.1	54° 45'	-0.2	-0.1	0	0.1	0.1	0.1	0	-0.2	-0.3	
0.1	0	0	0	0	0	0	0.1	0.1	54° 30'	-0.2	-0.1	0	0.1	0.2	0.1	-0.1	-0.2	-0.3	
0	0	0	0	0	0	0.1	0.1	0.1	54° 15'	-0.2	-0.1	0	0.1	0.1	0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0.1	0.1	0	0	54° 0'	-0.2	0	0	0.1	0.1	0	-0.1	-0.2	-0.2	
0	0	0	0	0	0.1	0.1	0.1	0.1	53° 45'	-0.1	0	0	0	0.1	0	-0.1	-0.2	-0.3	
0	0	0	0	0	0.1	0.1	0.1	0.1	53° 30'	-0.1	0	0	0	0	0	-0.1	-0.2	-0.3	
0	0	0	0	0	0.1	0.1	0.1	0.1	53° 15'	-0.1	0	0	0	0	0	-0.1	-0.2	-0.3	
0.1	0.1	0.1	0	0	0	0.1	0.1	0.1	53° 0'	-0.1	0	0	0	0	0	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0	0	0	0.1	0.1	0.1	52° 45'	-0.1	0	0	0.1	0	-0.1	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0	0	0	0.1	0.1	0	52° 30'	-0.1	0	0.1	0.1	0	-0.1	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0	0	0	0.1	0.1	52° 15'	-0.1	0	0.1	0.1	0	-0.1	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0	0	0.1	0.1	52° 0'	-0.1	0	0.1	0.1	0.1	-0.1	-0.2	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0.1	51° 45'	-0.1	0	0.1	0.2	0.1	0	-0.2	-0.3	-0.2	
0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	51° 30'	-0.1	0	0.1	0.2	0.2	0	-0.2	-0.3	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 15'	-0.1	0	0.1	0.2	0.2	0.1	-0.2	-0.3	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 0'	-0.1	0	0	0.2	0.2	0.1	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	0	50° 45'	-0.1	0	0	0.2	0.3	0.1	-0.2	-0.2	-0.1	
0	0.1	0.1	0.1	0.1	0	0	0.1	0	50° 30'	-0.1	-0.1	0	0.2	0.3	0.1	-0.2	-0.2	-0.1	
0	0	0.1	0.1	0.1	0	0	0	0	50° 15'	-0.1	-0.1	0	0.2	0.3	0.1	-0.2	-0.2	-0.1	
0	0	0	0	0.1	0	0	0	0	50° 0'	-0.2	-0.1	0	0.2	0.3	0.1	-0.2	-0.2	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 60 to 64 °E									
Correction to Latitude										Correction to Longitude									
60°	60°	61°	61°	62°	62°	63°	63°	64°	Longitude	60°	60°	61°	61°	62°	62°	63°	63°	64°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0.1	0.1	60° 0'	-0.4	-0.6	-0.5	-0.3	-0.1	-0.1	-0.2	-0.3	-0.3
0	0	0	0	0	0	0	0.1	0.1	0	59° 45'	-0.4	-0.6	-0.5	-0.3	-0.1	-0.1	-0.2	-0.3	-0.2
0	0	0	0	0	0	0	0	0	0	59° 30'	-0.4	-0.5	-0.4	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2
0	0	0	0	0	0	0	0	0	0	59° 15'	-0.4	-0.5	-0.4	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
0	0	0	0	0	0	0	0	0	0	59° 0'	-0.4	-0.5	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
0	0	0	0	0	0	0	0	0	0	58° 45'	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
0	0	0	0	0	0	0	0	0	0	58° 30'	-0.3	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1
0	0	0	0	0	0	0	0	0	0	58° 15'	-0.3	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1
0	0	0	0	0.1	0	0	0	0	0.1	58° 0'	-0.2	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
0.1	0.1	0	0	0	0	0	0	0	0.1	57° 45'	-0.2	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
0.1	0.1	0.1	0	0	0	0	0	0	0	57° 30'	-0.2	-0.3	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
0.1	0.1	0	0	0	0	0	0	0	0	57° 15'	-0.2	-0.3	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
0	0	0	0	0	0	0	0	0	0	57° 0'	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
0	0	0	0	0	0	0	0	0	0	56° 45'	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
0	0	0	0	0	0	0	0	0	0	56° 30'	-0.1	-0.3	-0.3	-0.3	-0.2	-0.2	-0.3	-0.2	-0.2
0	0	0	0	0	0	0	0	0	0	56° 15'	-0.1	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1
0	0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1
0	0.1	0.1	0	0	0	0	0	0	0	55° 45'	-0.1	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1
0.1	0.1	0.1	0	0	0	0	0	0	0	55° 30'	-0.1	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1
0.1	0.1	0.1	0	0	0	0	0	0	0	55° 15'	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1
0.1	0.1	0.1	0	0	0	0	0	0	0	55° 0'	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1
0.1	0.1	0	0.1	0.1	0.1	0	0	0	0.1	54° 45'	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	54° 30'	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	53° 45'	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2
0.1	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	53° 30'	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	53° 15'	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	53° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2
0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	52° 45'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.1
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	52° 30'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.1
0.1	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	52° 15'	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1
0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	52° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 45'	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	51° 30'	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1
0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	51° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.1	-0.1
0.1	0	0.1	0.1	0	0	0	0	0	0	51° 0'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1
0	0	0	0	0	0	0	0	0	0.1	50° 45'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1
0	0	0.1	0.1	0	0	0	0	0.1	0.1	50° 30'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.1
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 15'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 0'	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 64 to 68 °E									
Correction to Latitude										Correction to Longitude									
64° 0'	64° 30'	65° 0'	65° 30'	66° 0'	66° 30'	67° 0'	67° 30'	68° 0'	Longitude	64° 0'	64° 30'	65° 0'	65° 30'	66° 0'	66° 30'	67° 0'	67° 30'	68° 0'	
									Latitude										
0.1	0	0	0	0	0	0	0	0	60° 0'	-0.3	-0.2	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	59° 45'	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	59° 30'	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0.1	59° 15'	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0.1	0.1	0.1	59° 0'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0.1	0.1	0.1	0.1	58° 45'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0.1	0.1	0.1	0.1	58° 30'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	58° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0.1	0.1	0.1	0	0	0	0	0	0	58° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0.1	0.1	0	0	0	0	0	0	0	57° 45'	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 30'	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 15'	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 0'	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 45'	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 30'	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 45'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 30'	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 15'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0.1	0.1	0	0	0	0	0	0	55° 0'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0	0	0.1	0.1	0.1	54° 45'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 30'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 15'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	
0.1	0.1	0.1	0.1	0	0	0	0	0	54° 0'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0	0	0	0	0	53° 45'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0	0	0	0	0	0	53° 30'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0	0	0	0	0	0	0	53° 15'	-0.2	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	
0.1	0	0	0	0	0	0	0	0	53° 0'	-0.2	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	
0.1	0	0	0	0	0	0	0	0	52° 45'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	
0.1	0	0	0	0	0	0	0	0	52° 30'	-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0	0	0.1	0.1	0.1	0.1	0	52° 15'	-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	52° 0'	-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	51° 45'	-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	51° 30'	-0.1	0	0	0	0	-0.1	-0.1	0	-0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 15'	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	0	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 0'	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 45'	-0.1	-0.1	0	0	0	-0.1	-0.1	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 30'	-0.1	-0.1	0	0	0	-0.1	-0.1	0	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 15'	-0.2	-0.1	0	0	0	-0.1	-0.1	0	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 0'	-0.1	-0.1	0	0	0	-0.1	-0.1	0	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 68 to 72 °E									
Correction to Latitude										Correction to Longitude									
68°	68°	69°	69°	70°	70°	71°	71°	72°	Longitude	68°	68°	69°	69°	70°	70°	71°	71°	72°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0.1	59° 45'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0.1	59° 30'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0.1	0.1	0	0	0	0	0	0	0	59° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	59° 0'	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0	58° 45'	-0.2	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	
0.1	0.1	0.1	0	0	0	0	0	0	58° 30'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0.1	0.1	0	0	58° 15'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0.1	0.1	0.1	0	0	58° 0'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0.1	0.1	57° 45'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0.1	0.1	57° 30'	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0.1	0.1	57° 15'	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	56° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	56° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	55° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	55° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0.1	0.1	0.1	0	0	0	0	0	0	54° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0.1	0.1	0.1	0	0	0	0	0	0	54° 30'	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0.1	0.1	0	0	0	0.1	0	0	0	54° 15'	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0.1	0.1	0	0	0	54° 0'	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	53° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	53° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	53° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	53° 0'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	52° 45'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	52° 30'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0.1	0.1	0.1	0	0	52° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	52° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	51° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	51° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0	0	0.1	0.1	0.1	0.1	0.1	0.1	51° 15'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	51° 0'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	50° 45'	0	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	50° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	50° 15'	-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	
0.1	0.1	0	0	0.1	0.1	0.1	0.1	0.1	50° 0'	0	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 80 to 84 °E									
Correction to Latitude										Correction to Longitude									
80°	80°	81°	81°	82°	82°	83°	83°	84°	Longitude	80°	80°	81°	81°	82°	82°	83°	83°	84°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	60° 0'	0	0	-0.1	-0.1	0	0	0	0	0	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	59° 45'	0	0	-0.1	-0.1	-0.1	0	0	0	0	
0	0.1	0.1	0	0	0.1	0.1	0.1	0.1	59° 30'	-0.1	0	-0.1	-0.1	-0.1	-0.1	0	0	0	
0.1	0.1	0.1	0.1	0	0	0.1	0.1	0.1	59° 15'	-0.1	-0.1	0	-0.1	-0.1	-0.1	0	0	0	
0.1	0.1	0.1	0.1	0	0	0.1	0.1	0.1	59° 0'	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0.1	0	0	0	0.1	58° 45'	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0.1	0.1	0	0	0	58° 30'	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	58° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	58° 0'	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 45'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 30'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 15'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 0'	0	0	-0.1	-0.1	-0.1	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	56° 45'	0	0	0	0	-0.1	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 30'	-0.1	0	0	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	0	0	0	-0.1	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	56° 0'	0	0	0	0	-0.1	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	55° 45'	0	0	0	0	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	55° 30'	0	0	0	0	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	55° 15'	0	0	0	0	-0.1	-0.1	0	0	0	
0	0	0	0.1	0.1	0	0	0	0	55° 0'	0	0	0	0	-0.1	-0.1	0	0	0	
0	0	0.1	0.1	0.1	0.1	0	0	0.1	54° 45'	0	0	0	0	-0.1	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 30'	0	0	0	0	0	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 15'	0	0	0	0	0	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 0'	0	0	0	0	0	0	0	-0.1	0	
0.1	0.1	0.1	0.1	0	0	0	0	0	53° 45'	0	0	0	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	53° 30'	-0.1	0	0	0	0	0	0	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0	0	53° 15'	-0.1	0	0	0	0	0	0	0	-0.1	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	53° 0'	0	0	-0.1	0	0	0	0	0	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	52° 45'	0	0	-0.1	0	0	0	0	0	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	52° 30'	0	0	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	52° 15'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0	0	0	0	0	0	0	0	52° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0	0	0	0	0	-0.1	-0.1	-0.1	51° 45'	0	0	0	-0.1	-0.1	0	0	0	-0.1	
0.1	0.1	0.1	0	0	0	0	-0.1	-0.1	51° 30'	0	0	0	0	-0.1	0	0	0	0	
0.1	0.1	0.1	0.1	0	0	0	0	-0.1	51° 15'	0	0	0	0	0	0	0.1	0	0	
0.1	0.1	0.1	0.1	0	0	0	0	-0.1	51° 0'	-0.1	0	0	0.1	0	0	0.1	0.1	0	
0.1	0.1	0.1	0.1	0.1	0	0	0	-0.1	50° 45'	-0.1	0	0	0.1	0.1	0.1	0.1	0.1	0.1	
0.1	0	0.1	0.1	0.1	0.1	0.1	0	0	50° 30'	-0.1	0	0	0.1	0.1	0.1	0.2	0.2	0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 15'	0	0	0	0	0.1	0.1	0.2	0.2	0	
0	0	0	0	0	0	0.1	0.1	0.2	50° 0'	-0.1	-0.1	0	0	0.1	0.1	0.1	0.1	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 84 to 88 °E										
Correction to Latitude										Correction to Longitude										
84° 0'	84° 30'	85° 0'	85° 30'	86° 0'	86° 30'	87° 0'	87° 30'	88° 0'	Longitude	84° 0'	84° 30'	85° 0'	85° 30'	86° 0'	86° 30'	87° 0'	87° 30'	88° 0'		
										Latitude										
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	60° 0'	0	0	0	-0.1	0	0	0	-0.1	-0.1		
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 45'	0	0	0	0	0	0	0	-0.1	-0.1		
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 30'	0	0	0	-0.1	0	0	0	-0.1	-0.1		
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 15'	0	0	0	0	0	0	0	-0.1	-0.1		
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 0'	0	0	0	0	0	0	0	-0.1	-0.1		
0.1	0.1	0	0	0	0	0	0	0	58° 45'	0	0	0	0	0	0	0	-0.1	-0.1		
0	0	0	0	0	0	0	0	0	58° 30'	0	0	0	0	0	0	0	-0.1	-0.1		
0	0	0	0	0	0	0	0	0	58° 15'	0	0	0	0	0	0	0	-0.1	-0.1		
0	0	0.1	0	0	0	0	0	0	58° 0'	-0.1	0	0	0	0.1	0	-0.1	-0.1	-0.1		
0	0	0	0	0	0	0	0.1	0.1	57° 45'	-0.1	0	0	0.1	0.1	0	-0.1	-0.1	-0.1		
0	0	0	0	0	0	0.1	0.1	0.1	57° 30'	-0.1	0	0	0.1	0.1	0	-0.1	-0.1	-0.1		
0	0	0	0	0	0	0	0.1	0.1	57° 15'	-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1		
0	0	0	0	0	0	0	0	0.1	57° 0'	-0.1	0	0	0	0	-0.1	-0.1	-0.1	0		
0	0	0	0	0	0	0	0	0	56° 45'	-0.1	0	0	0	0	-0.1	-0.2	-0.1	0		
0	0	0	0	0	0	0	0	0	56° 30'	-0.1	0	0	0.1	0	-0.1	-0.2	-0.2	-0.1		
0	0	0	0	0	0	0	-0.1	-0.1	56° 15'	-0.1	0	0.1	0.1	0	-0.1	-0.2	-0.2	-0.1		
0	0	0	0	0	0	0	-0.1	-0.1	56° 0'	-0.1	0	0	0	0	0	-0.1	-0.2	-0.1		
0	0	0	0	0	0	0	0	-0.1	55° 45'	0	0	0	0	0	0	0	-0.1	-0.1		
0	0	0	0	0	0	0	0	-0.1	55° 30'	0	0	0	0	0	0.1	0	-0.1	-0.1		
0	0	0	0.1	0.1	0.1	0.1	0	0	55° 15'	0	0	0	0	0	0.1	0.1	0	0		
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	55° 0'	0	0	-0.1	-0.1	0	0.1	0.1	0.1	0.1		
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 45'	0	0	-0.1	-0.1	0	0	0.1	0.2	0.2		
0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	54° 30'	0	0	0	-0.1	-0.1	0	0.1	0.2	0.3		
0.1	0.1	0.1	0.1	0	0	0.1	0.1	0.1	54° 15'	0	0	0	0	-0.1	-0.1	0	0.2	0.3		
0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	54° 0'	0	0	0	0	0	-0.1	0	0.1	0.3		
0	0.1	0.1	0.1	0.1	0	0	0	0	53° 45'	-0.1	0	0	0	0	0	0	0.1	0.2		
0	0	0.1	0.1	0	0	0	0	0	53° 30'	-0.1	0	0	0	0	0	0.1	0.1	0.1		
0	0	0.1	0.1	0	0	0	0	0	53° 15'	-0.1	0	0	0	0	0.1	0.1	0.1	0		
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	53° 0'	-0.1	-0.1	0	0	0.1	0.1	0.1	0.1	0		
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	52° 45'	-0.1	-0.1	0	0.1	0.1	0.1	0.1	0.1	0		
0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	52° 30'	-0.1	-0.1	0	0.1	0.1	0.1	0.1	0.1	0.1		
0.1	0	0	0	0	0	0	0	0	52° 15'	-0.1	0	0.1	0.1	0.1	0.1	0	0.1	0.1		
0	0	0	0	0	0	0	0	0	52° 0'	-0.1	0	0.1	0.1	0.1	0.1	0	0.1	0.2		
-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	51° 45'	-0.1	0	0	0	0.1	0.1	0.1	0.1	0.1		
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	51° 30'	0	0	0	0	0.1	0.1	0.1	0	0.1		
-0.1	-0.1	-0.1	0	0	0	0	0	0	51° 15'	0	0	0	0	0.1	0.1	0	0	0.1		
-0.1	-0.1	0	0	0	0	0	0	0	51° 0'	0	0	0	0	0.1	0.1	0	0	0		
-0.1	0	0	0	0	0.1	0.1	0	0	50° 45'	0.1	0	-0.1	-0.1	0	0.1	0.1	0	0		
0	0	0	0	0	0	0	0	0	50° 30'	0.1	-0.1	-0.1	-0.1	0	0	0.1	0.1	0		
0.1	0.2	0.1	0	-0.1	0	0	0	0	50° 15'	0	0	0	0	0	0	0.1	0.1	0		
0.2	0.2	0.2	0.1	0	0	0	0	0	50° 0'	0	0	0.1	0.2	0	-0.1	0	0.1	0		

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 88 to 92 °E									
Correction to Latitude										Correction to Longitude									
88°	88°	89°	89°	90°	90°	91°	91°	92°	Longitude	88°	88°	89°	89°	90°	90°	91°	91°	92°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	60° 0'	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	0.1	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 45'	-0.1	-0.2	-0.1	0	0.1	0.2	0.1	0.1	0.1	
0.1	0	0	0.1	0.1	0.1	0.1	0.1	0.1	59° 30'	-0.1	-0.2	-0.1	-0.1	0.1	0.2	0.2	0.1	0.1	
0.1	0	0	0	0.1	0.1	0.1	0.1	0.1	59° 15'	-0.1	-0.1	-0.2	-0.1	0	0.1	0.2	0.2	0.1	
0.1	0	0	0	0	0.1	0.1	0.1	0.1	59° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0.2	0.1	
0	0	0	0	0	0	0.1	0.1	0.1	58° 45'	-0.1	0	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	
0	0	0	0	0	0	0.1	0.1	0.1	58° 30'	-0.1	0	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	58° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	58° 0'	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	0.1	
0.1	0.1	0	0	0	0	0	0	0	57° 45'	-0.1	0	0	0	-0.1	-0.1	-0.1	0	0.1	
0.1	0.1	0.1	0.1	0	0	0	0	0	57° 30'	-0.1	0	0	0	0	-0.1	-0.1	0	0	
0.1	0.1	0.1	0	0	0	0	0	0	57° 15'	-0.1	-0.1	0	0	0	0	0	0	0	
0.1	0	0	0	0	0	0	0	0	57° 0'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	56° 45'	0	0	0	0	0	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	56° 30'	-0.1	0	0	0	-0.1	-0.1	0	0	-0.1	
-0.1	0	0	0	0	0	0	-0.1	-0.1	56° 15'	-0.1	0	0	0	0	0	0	0	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	56° 0'	-0.1	-0.1	0	0	0	0	0	0	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	55° 45'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	55° 30'	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	0	0	
0	-0.1	-0.1	0	0	0	0	0	0	55° 15'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	
0	-0.1	-0.1	0	0	0	0	0	0	55° 0'	0.1	-0.1	-0.2	-0.2	-0.1	0	-0.1	0	0.1	
0.1	0	0	0	0	0	0	0	0	54° 45'	0.2	0	-0.2	-0.2	-0.1	0	0	0	0	
0.1	0.1	0	0	0	0	0	0.1	0.1	54° 30'	0.3	0.1	-0.1	-0.2	-0.1	-0.1	-0.1	0	0	
0.1	0.1	0	0	0	0	0.1	0.1	0.1	54° 15'	0.3	0.2	0	-0.1	-0.1	-0.1	-0.1	0	0	
0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	54° 0'	0.3	0.2	0.1	-0.1	-0.2	-0.2	-0.2	0	0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	53° 45'	0.2	0.2	0.1	-0.1	-0.2	-0.2	-0.2	0	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	53° 30'	0.1	0.1	0.1	0	-0.2	-0.2	-0.1	0	0	
0	0.1	0.1	0.1	0.1	0.1	0	0	0	53° 15'	0	0.1	0.1	0	-0.2	-0.2	-0.1	0	0	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	53° 0'	0	0	0	0	-0.1	-0.1	0	0	0	
0.1	0	0	0	0	0	-0.1	0	0	52° 45'	0	0	0	0	-0.1	-0.1	0	0	0	
0.1	0	0	0	0	-0.1	0	0	0	52° 30'	0.1	0.1	0	0	0	0	0	0	-0.1	
0	0	0	0	-0.1	0	0	0	0	52° 15'	0.1	0.1	0.1	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0.1	0.1	0.1	52° 0'	0.2	0.2	0.1	0	0	-0.1	-0.1	-0.1	-0.1	
-0.1	0	0	0	0.1	0.1	0.1	0.1	0.1	51° 45'	0.1	0.2	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	51° 30'	0.1	0.1	0	-0.1	-0.1	-0.2	-0.1	-0.1	0	
0	0	0.1	0.1	0.1	0.1	0	0	0	51° 15'	0.1	0.1	0	-0.1	-0.2	-0.2	-0.1	0	0	
0	0.1	0.1	0	0	0	0	0	0	51° 0'	0	0.1	0	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0.1	0	0	0	0	0	0.1	50° 45'	0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0.1	50° 30'	0	0	0	0	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0.1	0.1	0	0	0	50° 15'	0	0	0	0	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0.1	0.1	0	-0.1	-0.1	50° 0'	0	0	0	-0.1	-0.1	0	0	-0.2	-0.2	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 92 to 96 °E									
Correction to Latitude										Correction to Longitude									
92° 0'	92° 30'	93° 0'	93° 30'	94° 0'	94° 30'	95° 0'	95° 30'	96° 0'	Longitude	92° 0'	92° 30'	93° 0'	93° 30'	94° 0'	94° 30'	95° 0'	95° 30'	96° 0'	Latitude
0.1	0.1	0.1	0.1	0	0	0	0	0	60° 0'	0.1	0.1	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	59° 45'	0.1	0.1	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	59° 30'	0.1	0.1	0.1	0.1	0	-0.1	-0.2	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	59° 15'	0.1	0.1	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	59° 0'	0.1	0.1	0.1	0.1	0	0	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	58° 45'	0.1	0.1	0.1	0.1	0	0	0	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	58° 30'	0.1	0.2	0.1	0.1	0	0	0	-0.1	-0.1	
0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	58° 15'	0.1	0.2	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	0.1	0.1	0.1	0.1	0.2	0.2	0.1	58° 0'	0.1	0.1	0.1	0	-0.1	-0.2	-0.1	-0.1	-0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	57° 45'	0.1	0.1	0.1	0	-0.1	-0.2	-0.2	0	0	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	57° 30'	0	0	0	0	-0.1	-0.2	-0.2	0	0	
0	0	0.1	0.1	0	0	0	0	0	57° 15'	0	0	0	0	-0.1	-0.2	-0.2	0	0.1	
0	0.1	0.1	0.1	0	0	0	0	0	57° 0'	0	0	0	0	-0.1	-0.2	-0.2	0	0	
0	0	0.1	0.1	0	0	-0.1	0	0	56° 45'	0	-0.1	0	0.1	0	-0.1	-0.2	-0.1	0	
0	0	0	0	0	0	0	0	0	56° 30'	-0.1	-0.1	0	0.1	0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	56° 15'	-0.1	-0.1	-0.1	0.1	0.1	0	-0.1	-0.1	-0.1	
0	-0.1	-0.1	-0.1	0	0	0	0	0	56° 0'	0	-0.1	-0.1	0	0	0	0	0	-0.1	
0	0	-0.1	-0.1	0	0	0	0	0	55° 45'	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0	
0	0	0	-0.1	-0.1	-0.1	0	0	0	55° 30'	0	0	0	-0.1	-0.1	-0.1	0	0.1	0.1	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	55° 15'	0.1	0.1	0	0	-0.1	-0.1	-0.1	0	0.1	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	55° 0'	0.1	0	0	0	0	-0.1	-0.1	0	0	
0	0	0	0	0	0	-0.1	-0.1	-0.1	54° 45'	0	0	0	0.1	0.1	0	0	0	0	
0.1	0.1	0	0.1	0.1	0	0	0	-0.1	54° 30'	0	0	0	0.1	0.1	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	54° 15'	0	0	0	0	0.1	0.1	0.1	0.1	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	54° 0'	0.1	0	0	0	0.1	0.1	0.1	0.1	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	53° 45'	0	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	53° 30'	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0.1	0.1	0.1	53° 15'	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0.1	0.1	53° 0'	0	0	0	0.1	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0.1	52° 45'	0	0	0	0	0	0	0	0	0	
0	0	0.1	0.1	0.1	0.1	0	0	0	52° 30'	-0.1	0	0	0	0	0	0	0	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	52° 15'	-0.1	-0.1	0	0	0	0.1	0.1	0	-0.1	
0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0	52° 0'	-0.1	-0.1	-0.1	-0.1	0	0.2	0.2	0	0	
0.1	0.1	0	0.1	0.1	0.1	0.2	0.2	0.1	51° 45'	-0.1	-0.1	-0.1	-0.1	0	0.1	0.2	0.1	0	
0.1	0.1	0	0	0	0	0.1	0.1	0.1	51° 30'	0	0	-0.1	-0.1	-0.1	0.1	0.1	0.1	0.1	
0	0.1	0	0	0	0	0	0.1	0.1	51° 15'	0	0	0	-0.1	0	0	0	0.1	0.1	
0	0.1	0.1	0	0	0	0	0	0	51° 0'	0	0	0	0	0	0	0	0	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	50° 45'	-0.1	0	0	0	0.1	0	0	0	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	50° 30'	-0.2	0	0	0	0	0.1	0	0.1	0.1	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	50° 15'	-0.2	0	0.1	0	0	0.1	0.1	0.1	0.2	
-0.1	-0.1	0	0	0	0	0	0.1	0.1	50° 0'	-0.2	-0.1	0	0	-0.1	0	0.1	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 96 to 100 °E									
Correction to Latitude										Correction to Longitude									
96°	96°	97°	97°	98°	98°	99°	99°	100°	Longitude	96°	96°	97°	97°	98°	98°	99°	99°	100°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	59° 45'	-0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0.1	0.1	0.1	59° 30'	-0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0.1	0.1	0.1	0.1	59° 15'	-0.1	0	0	-0.1	-0.1	0	0	0	0	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	58° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	58° 30'	-0.1	-0.1	-0.1	0	0	0	0	0	0.1	
0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	58° 15'	-0.1	-0.1	-0.1	0	0	0	0	0	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	58° 0'	-0.1	-0.1	-0.1	0	0	0	0	0	0.1	
0.1	0.1	0	0	0	0.1	0.1	0.1	0	57° 45'	0	-0.1	-0.1	0	0	0	0	0	0.1	
0.1	0	0	0	0	0	0	0	0	57° 30'	0	0	-0.1	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	57° 15'	0.1	0	0	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	57° 0'	0	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	56° 45'	0	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0.1	56° 30'	-0.1	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	-0.1	0	0	0	0	0.1	0.1	0.1	
0	-0.1	-0.1	0	0	0	0	0	0	56° 0'	-0.1	-0.1	-0.1	-0.1	0	0	0	0	0.1	
0	-0.1	-0.1	-0.1	-0.1	0	0	0	0	55° 45'	0	0	-0.1	-0.1	-0.1	0	0	0	0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	55° 30'	0.1	0	-0.1	-0.1	-0.1	-0.1	0	0	0.1	
-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	55° 15'	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	0	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	55° 0'	0	0.1	0	0	-0.1	-0.2	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	54° 45'	0	0	0	0	-0.1	-0.1	-0.2	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	54° 30'	0	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.1	
0	0	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	54° 15'	0.1	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	54° 0'	0.1	0.1	0	0	-0.1	-0.1	-0.1	-0.2	-0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	53° 45'	0.1	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0	0	0	-0.1	-0.1	53° 30'	0.1	0.1	0.1	0	0	0	0	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	-0.1	53° 15'	0.1	0.1	0.1	0	0	0	0	0	-0.1	
0.1	0.2	0.2	0.1	0.1	0.1	0	0	0	53° 0'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	52° 45'	0	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	52° 30'	0	0	0.1	0.1	0.1	0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	52° 15'	-0.1	0	0.1	0.1	0.1	0.1	0.1	0	0.1	
0	0	0	0	0.1	0.1	0.1	0	0	52° 0'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 45'	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 15'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0.1	0.1	0	0	0	0	51° 0'	0.1	0	0	0.1	0.2	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	50° 45'	0.1	0	-0.1	0.1	0.2	0.1	0.1	0.1	0	
0	0	0	0	0	0.1	0.1	0.1	0.1	50° 30'	0.1	0	-0.1	0	0.2	0.1	0.1	0.1	0	
0.1	0.1	0	0	0	0.1	0.1	0.1	0.1	50° 15'	0.2	0.1	0	0	0.1	0.1	0	0.1	0	
0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	50° 0'	0.1	0.1	0.1	0	0	0	0	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 100 to 104 °E									
Correction to Latitude										Correction to Longitude									
100°	100°	101°	101°	102°	102°	103°	103°	104°	Longitude	100°	100°	101°	101°	102°	102°	103°	103°	104°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	60° 0'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0.1	0.1	0.1	0.1	0	0	0	0	59° 45'	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	59° 30'	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	59° 15'	0	0	0	0.1	0.1	0.2	0.2	0.1	0.1	
0.1	0.1	0	0	0.1	0.1	0	0	0	59° 0'	0	0	0	0.1	0.1	0.2	0.2	0.2	0.1	
0.1	0.1	0	0	0	0	0	0	0	58° 45'	0	0.1	0	0	0.1	0.2	0.2	0.2	0.1	
0.1	0.1	0	0	0	0	0	0	0	58° 30'	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	
0.1	0.1	0	0	0	0	0	0	0.1	58° 15'	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	
0.1	0	0	0	0	0	0	0	0.1	58° 0'	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0.1	0.1	57° 45'	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0.1	0.1	57° 30'	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	57° 15'	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	57° 0'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	56° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0.1	0.1	0	0	0.1	0	0	0	0	56° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0.1	0.1	0.1	0	0	0	0	56° 15'	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0.1	0	0	0	0	0	56° 0'	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	55° 45'	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	55° 30'	0.1	0.1	0	0.1	0.2	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	55° 15'	0.1	0.1	0	0.1	0.2	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	55° 0'	0	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	54° 45'	0	0	0.1	0.1	0.1	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	54° 30'	-0.1	0	0.1	0.1	0.1	0.2	0.2	0.2	0.1	
-0.1	0	0	0	0	0	0.1	0.1	0	54° 15'	-0.1	0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	
-0.1	-0.1	0	0	0	0	0	0	0	54° 0'	-0.1	0	0	0.1	0.1	0.1	0.1	0.2	0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	53° 45'	-0.1	-0.1	0	0.1	0.1	0.1	0.1	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	53° 30'	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0.1	53° 15'	-0.1	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	
0	0	-0.1	-0.1	-0.1	0	0	0	0.1	53° 0'	0	-0.1	-0.1	-0.1	0	0	0	0.1	0.1	
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	52° 45'	0	0	0	-0.1	-0.1	0	0	0	0.1	
0	0	0	0	0	0	0	0	0.1	52° 30'	0.1	0.1	0	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0.1	0.1	0.1	0	0	0.1	52° 15'	0.1	0.1	0	-0.1	-0.1	0	0	-0.1	0	
0	0.1	0.1	0.1	0.1	0.1	0	0	0.1	52° 0'	0	0	0	-0.1	-0.1	0	0	-0.1	-0.1	
0.1	0.1	0.1	0.1	0	0	0	0	0	51° 45'	0	0	0	-0.1	-0.1	0	0.1	-0.1	-0.2	
0.1	0.1	0.1	0	0	0	0	0	-0.1	51° 30'	0	0.1	0	-0.1	-0.1	0.1	0.1	-0.1	-0.2	
0.1	0.1	0.1	0.1	0	0	0	0	-0.1	51° 15'	0	0.1	0.1	0	0	0	0.1	0	-0.1	
0	0.1	0.1	0.1	0.1	0	0.1	0.1	0	51° 0'	0	0	0.1	0.1	0	0	0	0	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 45'	0	-0.1	0	0.1	0.1	0	0	0	0.1	
0.1	0	0	0.1	0.1	0.1	0.1	0.1	0.1	50° 30'	0	-0.1	0	0.1	0.1	0	0	0	0	
0.1	0.1	0	0	0.1	0.1	0.1	0	0	50° 15'	0	0	0	0.1	0	0	0	0	0	
0.1	0.1	0	0	0.1	0.1	0.1	0	0	50° 0'	0.1	0	0	0	0	0	0.1	0	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 104 to 108 °E									
Correction to Latitude										Correction to Longitude									
104° 0'	104° 30'	105° 0'	105° 30'	106° 0'	106° 30'	107° 0'	107° 30'	108° 0'	Longitude	104° 0'	104° 30'	105° 0'	105° 30'	106° 0'	106° 30'	107° 0'	107° 30'	108° 0'	
									Latitude										
0.1	0	0	0	0	0	0	0	0	60° 0'	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 45'	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 30'	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 15'	0.1	0.1	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 0'	0.1	0.1	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	58° 45'	0.1	0	0	0	0	0.1	0.1	0.1	0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	58° 30'	0.1	0	0	0	0	0.1	0.1	0.1	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	58° 15'	0.1	0	0	0	0	0	0.1	0.1	0.1	
0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	58° 0'	0.1	0	0	0	0	0	0	0.1	0.1	
0.1	0.1	0	0	0	0	0	0	0	57° 45'	0	0	0	0	0	0	0	0.1	0.1	
0.1	0.1	0	0	0	0	0	0	0	57° 30'	0	0	0	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	57° 15'	0	0	0	0	0.1	0	0	0	0.2	
0	0	0	0	0	0	0	0	0	57° 0'	0.1	0.1	0	0	0.1	0.1	0	0	0.2	
0	0	0	0	0	0	0	0	0	56° 45'	0.1	0.1	0	0	0.1	0.1	0	0	0.2	
0	0	0	0	0	0	0	0	0	56° 30'	0.1	0.1	0	0	0.1	0.1	0	0	0.2	
0	0	0	0	0	0	-0.1	0	0	56° 15'	0.1	0.1	0	0	0.1	0.1	0	0	0.2	
0	0	0	0	-0.1	-0.1	0	0	0	56° 0'	0.1	0.2	0.1	0.1	0.2	0.1	0	0	0.3	
0	0	0	0	0	0	0	0	0	55° 45'	0.2	0.2	0.1	0.1	0.2	0.1	-0.1	0	0.3	
0	0	0	0	0	0	0	0	0	55° 30'	0.2	0.1	0.1	0.1	0.2	0	-0.1	0.1	0.3	
0	0	0	0	0	0	0	0	0	55° 15'	0.2	0.1	0	0.1	0.2	0	-0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	55° 0'	0.2	0.1	0	0.2	0.2	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 45'	0.1	0	0	0.2	0.2	0	0	0.1	0	
0	0	0	0	0	0	0	0	0	54° 30'	0.1	0	0.1	0.1	0.1	0	0.1	0.1	0	
0	0	0	0	0.1	0.1	0	0	0	54° 15'	0.2	0.1	0.1	0.1	0	0.1	0.2	0.1	-0.1	
0	0	0	0	0.1	0	0	0	0.1	54° 0'	0.2	0.2	0.1	0	0	0.1	0.2	0	-0.1	
0	0	0	0	0	0	0	0.1	0.1	53° 45'	0.2	0.2	0	0	0	0.2	0.1	-0.1	-0.1	
0	0.1	0.1	0	0	0	0.1	0.1	0.1	53° 30'	0.2	0.1	0	0	0.1	0.2	0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	53° 15'	0.1	0.1	0.1	0.1	0.1	0.1	0	-0.1	0	
0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0	53° 0'	0.1	0.1	0.1	0	0	0	0	0.1	0.2	
0	0	0	0.1	0.2	0.2	0.2	0.1	0	52° 45'	0.1	0.1	0.1	-0.1	-0.1	0	0.1	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	52° 30'	0	0.1	0	-0.1	-0.2	0	0.2	0.3	0.4	
0.1	0.2	0.2	0.2	0.1	0	-0.1	-0.1	0	52° 15'	0	0	0	-0.1	-0.1	0.1	0.3	0.3	0.3	
0.1	0.1	0.2	0.1	0	-0.1	-0.1	0	0	52° 0'	-0.1	-0.1	0	0	0.2	0.3	0.2	0.2	0.2	
0	0	0.1	0	0	-0.1	0	0	0	51° 45'	-0.2	-0.2	0	0.2	0.3	0.3	0.1	0.1	0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	51° 30'	-0.2	-0.2	0	0.2	0.3	0.2	0.1	0.1	0.2	
-0.1	-0.1	-0.2	-0.1	0	0.1	0.1	0	0	51° 15'	-0.1	-0.1	-0.1	0.1	0.2	0.2	0.1	0.1	0.3	
0	0	-0.1	-0.1	0	0.1	0.1	0	0	51° 0'	0	0	-0.1	0	0.1	0.1	0.1	0.2	0.3	
0.1	0.1	0	0	0	0	0	0	0	50° 45'	0.1	0	-0.1	-0.1	0	0.1	0.2	0.2	0.2	
0.1	0.1	0.1	0	0	0	0	0	0	50° 30'	0	0	0	0	0	0.2	0.2	0.2	0.2	
0	0.1	0.1	0	0	0	0	0	0	50° 15'	0	0	0	0	0.1	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	50° 0'	0	0	0	0.1	0.1	0.1	0.2	0.2	0.2	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 108 to 112 °E									
Correction to Latitude										Correction to Longitude									
108°	108°	109°	109°	110°	110°	111°	111°	112°	Longitude	108°	108°	109°	109°	110°	110°	111°	111°	112°	Latitude
0'	30'	0'	30'	0'	30'	0'	30'	0'		0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	0.1	0.1	0.1	0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	59° 45'	0.1	0.1	0.1	0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	59° 30'	0.1	0.1	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	59° 15'	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0.1
0	0	0.1	0	0	0	0	0	-0.1	59° 0'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0.1
0.1	0.1	0.1	0.1	0	0	0	-0.1	-0.1	58° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
0.1	0.1	0.1	0.1	0	0	0	-0.1	-0.1	58° 30'	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
0.1	0.1	0.1	0	0	0	-0.1	-0.1	-0.1	58° 15'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
0.1	0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	58° 0'	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.3	0.3	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	57° 45'	0.1	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	57° 30'	0.1	0.3	0.3	0.4	0.3	0.3	0.2	0.2	0.2	
0	0	-0.1	-0.1	-0.1	0	0	0	0	57° 15'	0.2	0.3	0.4	0.3	0.3	0.3	0.2	0.1	0.1	
0	0	-0.1	-0.1	-0.1	0	0	0	0	57° 0'	0.2	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0	
0	0	-0.1	-0.1	0	0	0.1	0.1	0.1	56° 45'	0.2	0.4	0.5	0.3	0.2	0.1	0.1	0.1	0	
0	-0.1	-0.1	0	0	0.1	0.1	0.1	0.1	56° 30'	0.2	0.5	0.5	0.3	0.1	0	0	0	0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0	56° 15'	0.2	0.4	0.4	0.2	0	0	0	0	0.1	
0	0	0.1	0.2	0.2	0.1	0	0	-0.1	56° 0'	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.2	
0	0	0.1	0.2	0.1	0	-0.1	-0.1	-0.1	55° 45'	0.3	0.2	0	0	0.2	0.3	0.2	0.2	0.2	
0	0	0.1	0.1	0	0	-0.1	0	0	55° 30'	0.3	0.1	-0.1	0	0.4	0.4	0.3	0.2	0.2	
0	0.1	0.1	0.1	0	0	0	0.1	0	55° 15'	0.2	0	-0.1	0.1	0.5	0.4	0.2	0.1	0.2	
0	0.1	0.1	0.1	0	0.1	0.1	0.1	0	55° 0'	0.1	-0.1	-0.1	0.3	0.5	0.3	0.1	0.1	0.2	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	54° 45'	0	-0.2	-0.1	0.3	0.4	0.3	0.1	0.2	0.3	
0	0	0	0	0.1	0.1	0	0	-0.1	54° 30'	0	-0.2	-0.1	0.2	0.3	0.3	0.3	0.4	0.3	
0	0	0	-0.1	0	0	0	-0.1	0	54° 15'	-0.1	-0.2	0	0.2	0.3	0.3	0.4	0.4	0.3	
0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	54° 0'	-0.1	-0.1	0.1	0.2	0.2	0.3	0.4	0.3	0.2	
0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	0	0	53° 45'	-0.1	0	0.2	0.2	0.2	0.3	0.4	0.2	0.1	
0.1	0	0	-0.1	-0.1	-0.1	0	0	0	53° 30'	-0.1	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.2	
0	-0.1	-0.1	0	0	0	0	0	0	53° 15'	0	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.2	
0	-0.1	-0.1	0	0	0	0	0	0	53° 0'	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	52° 45'	0.3	0.3	0.1	0.1	0.2	0.2	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	52° 30'	0.4	0.3	0.1	0.1	0.2	0.2	0.2	0.2	0.2	
0	0.1	0.1	0	0	0	0	0	0	52° 15'	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.2	
0	0	0	0	0	0	0	0	0	52° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	51° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	51° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	51° 15'	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	51° 0'	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	50° 45'	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	50° 30'	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	50° 15'	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	50° 0'	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 112 to 116 °E									
Correction to Latitude										Correction to Longitude									
112°	112°	113°	113°	114°	114°	115°	115°	116°	Longitude	112°	112°	113°	113°	114°	114°	115°	115°	116°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	60° 0'	0	0	0	0	0.1	0.2	0.3	0.3	0.4	
0	0	0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	59° 45'	0	0	0.1	0.1	0.2	0.3	0.3	0.3	0.3	
0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	59° 30'	0	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.2	
0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	59° 15'	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	59° 0'	0.1	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 45'	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	58° 30'	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	-0.1	58° 15'	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.2	
-0.1	-0.1	-0.1	0	0	0.1	0.1	0	0	58° 0'	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.3	
0	0	0	0	0.1	0.1	0.1	0	0.1	57° 45'	0.2	0.2	0.2	0.1	0	0.1	0.2	0.2	0.3	
0	0	0.1	0	0	0	0	0	0	57° 30'	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	
0	0	0.1	0	0	0	-0.1	-0.1	-0.1	57° 15'	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	
0	0.1	0.1	0.1	0	0	0	0	-0.1	57° 0'	0	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	56° 45'	0	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.2	
0.1	0.1	0	0	0	0	0.1	0.1	0.1	56° 30'	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	56° 15'	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	56° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	55° 45'	0.2	0.2	0.1	0.2	0.3	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	55° 30'	0.2	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	55° 15'	0.2	0.1	0.1	0.2	0.3	0.2	0.1	0.2	0.2	
0	0	0	-0.1	0	0	0	0	0	55° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 45'	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	
-0.1	0	0	0	0	0	0	0	0	54° 30'	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 15'	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	54° 0'	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	53° 45'	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	53° 30'	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	53° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	53° 0'	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	52° 45'	0.2	0.1	0.1	0.3	0.3	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	52° 30'	0.2	0.1	0.1	0.3	0.3	0.1	0.1	0.2	0.2	
0	0	0	0	0	0.1	0	0	0	52° 15'	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	52° 0'	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	51° 45'	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	51° 30'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	51° 15'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	51° 0'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	50° 45'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	50° 30'	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	50° 15'	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	50° 0'	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 116 to 120 °E									
Correction to Latitude										Correction to Longitude									
116°	116°	117°	117°	118°	118°	119°	119°	120°	Longitude	116°	116°	117°	117°	118°	118°	119°	119°	120°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
-0.1	-0.1	-0.1	0	0	0	0	0	0	60° 0'	0.4	0.3	0.3	0.1	0.1	0.1	0.2	0.2	0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	59° 45'	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.2	
-0.1	-0.1	0	0	0	0	0	0	0	59° 30'	0.2	0.2	0.1	0.1	0	0.1	0.2	0.2	0.3	
-0.1	-0.1	0	0	0	0	0	0	0	59° 15'	0.1	0.1	0.1	0	0	0.1	0.1	0.2	0.3	
-0.1	-0.1	0	0	0	0	-0.1	-0.1	0	59° 0'	0.1	0	0	0	0	0.1	0.2	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	0	58° 45'	0.1	0	0	0	0.1	0.2	0.2	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	58° 30'	0.1	0.1	-0.1	-0.1	0.1	0.2	0.3	0.2	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	58° 15'	0.2	0.1	-0.1	-0.1	0.1	0.3	0.3	0.2	0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	58° 0'	0.3	0.2	0	-0.1	0.1	0.2	0.2	0.2	0.1	
0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	57° 45'	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.2	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	57° 30'	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	0	57° 15'	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.1	
-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	0	57° 0'	0.2	0.3	0.3	0.2	0.1	0.1	0.2	0.2	0.1	
0	0	0	0	0	-0.1	-0.1	-0.1	0	56° 45'	0.2	0.3	0.2	0.1	0.1	0.2	0.3	0.2	0.1	
0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	0	56° 30'	0.3	0.3	0.3	0.1	0.1	0.2	0.3	0.2	0.1	
0	0	0	0	-0.1	-0.1	-0.1	0	0	56° 15'	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0.1	0	56° 0'	0.2	0.3	0.4	0.3	0.2	0.2	0.1	0.1	0.1	
-0.1	0	0	0	0	0	0.1	0.1	0	55° 45'	0.2	0.3	0.3	0.3	0.2	0.1	0	0.1	0.1	
0	0	0	0	0.1	0.1	0	0	0	55° 30'	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	55° 15'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	55° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	54° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	54° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	54° 15'	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 0'	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	53° 45'	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	53° 30'	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	53° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	53° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	52° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	52° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	-0.1	0	52° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	52° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	51° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	51° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	51° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	51° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	50° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	50° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	
0	0	0	0	0	0	0	0	0	50° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	50° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N
Correction to Latitude
Longitude 120 to 124 °E
Correction to Longitude

Latitude										Longitude									
120°	120°	121°	121°	122°	122°	123°	123°	124°	Longitude	120°	120°	121°	121°	122°	122°	123°	123°	124°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	-0.1	-0.1	-0.1	60° 0'	0.2	0.2	0.3	0.4	0.3	0.3	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	59° 45'	0.2	0.2	0.3	0.4	0.3	0.3	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	59° 30'	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	
0	0	0	0	0	0	-0.1	-0.1	0	59° 15'	0.3	0.2	0.2	0.3	0.4	0.3	0.3	0.2	0.2	
0	0	0	0	0	-0.1	-0.1	-0.1	0	59° 0'	0.2	0.2	0.2	0.3	0.4	0.4	0.3	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	58° 45'	0.2	0.2	0.2	0.3	0.4	0.4	0.3	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	58° 30'	0.1	0.2	0.2	0.3	0.4	0.3	0.2	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	58° 15'	0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	58° 0'	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	57° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
-0.1	0	0	0	0	0	0	0	0	57° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.3
-0.1	0	0	0	0	0	-0.1	-0.1	0	57° 15'	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.1	0.2	
-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	57° 0'	0.1	0	0.1	0.2	0.3	0.3	0.2	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	56° 45'	0.1	0	0	0.2	0.3	0.3	0.2	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	-0.1	56° 30'	0.1	0	0	0.1	0.2	0.3	0.3	0.2	0.1	
0	0	0	0	0	0	0	0	0	56° 15'	0.1	0	0.1	0.1	0.2	0.3	0.3	0.3	0.2	
0.1	0	0	0	0	0	0	0	0	56° 0'	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.2	
0.1	0	0	0	0	0	0	0	0	55° 45'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	55° 30'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	55° 15'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	55° 0'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 45'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 30'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 15'	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 0'	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	53° 45'	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	53° 30'	0.1	0.1	0	0.1	0.2	0.2	0.2	0.2	0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 15'	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	
0	0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	53° 0'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	52° 45'	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 30'	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 15'	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 0'	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 45'	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	51° 30'	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1
0	0	0	0	0	0	0	0	0	51° 15'	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	51° 0'	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	50° 45'	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1
0	0	0	0	0	0	0	0	0	50° 30'	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	50° 15'	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	50° 0'	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.2	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 124 to 128 °E									
Correction to Latitude										Correction to Longitude									
124° 0'	124° 30'	125° 0'	125° 30'	126° 0'	126° 30'	127° 0'	127° 30'	128° 0'	Longitude	124° 0'	124° 30'	125° 0'	125° 30'	126° 0'	126° 30'	127° 0'	127° 30'	128° 0'	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	60° 0'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
0	0	0	0	0	0	-0.1	-0.1	-0.1	59° 45'	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	59° 30'	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	-0.1	-0.1	-0.1	59° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	59° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 30'	0.2	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 15'	0.2	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.2	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 0'	0.3	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	-0.1	-0.1	-0.1	57° 45'	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	-0.1	-0.1	57° 30'	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	57° 15'	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	
-0.1	-0.1	0	0	0	0	0	0	0	57° 0'	0.1	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	56° 45'	0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	56° 30'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	56° 15'	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	56° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	55° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	55° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	55° 15'	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	55° 0'	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	54° 45'	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	54° 30'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	-0.1	54° 15'	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	-0.1	54° 0'	0.2	0.2	0.3	0.2	0.2	0.1	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	53° 45'	0.2	0.2	0.3	0.2	0.2	0.1	0.2	0.2	0.1	
-0.1	0	0	0	0	0	0	0	0	53° 30'	0.2	0.2	0.3	0.2	0.2	0.1	0.2	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	53° 15'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	
-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	53° 0'	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	
-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 45'	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 30'	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	52° 15'	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	52° 0'	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	51° 45'	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	51° 30'	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	51° 15'	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	-0.1	-0.1	-0.1	0	0	51° 0'	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	-0.1	-0.1	-0.1	0	0	50° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0.1	
0	0	0	0	0	-0.1	-0.1	0	0	50° 30'	0.2	0.1	0.1	0.2	0.1	0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	50° 15'	0.2	0.2	0.1	0.2	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	50° 0'	0.2	0.2	0.1	0.1	0.2	0.1	0	0	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 132 to 136 °E									
Correction to Latitude										Correction to Longitude									
132° 0'	132° 30'	133° 0'	133° 30'	134° 0'	134° 30'	135° 0'	135° 30'	136° 0'	Longitude	132° 0'	132° 30'	133° 0'	133° 30'	134° 0'	134° 30'	135° 0'	135° 30'	136° 0'	
									Latitude										
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	60° 0'	0.1	0.1	0.1	0.1	0.1	0	0	0.1	0.2	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	59° 45'	0.1	0.1	0.1	0.1	0.1	0	0	0.1	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	59° 30'	0.1	0.1	0.2	0.2	0.1	0	0	0.1	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	59° 15'	0.2	0.1	0.2	0.2	0.1	0	0.1	0.1	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	59° 0'	0.2	0.2	0.1	0.1	0.1	0	0.1	0.1	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 45'	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	58° 15'	0.1	0	0	0.1	0.1	0.1	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	58° 0'	0.1	0	0	0	0.1	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	-0.1	57° 45'	0.1	0	0	0	0.1	0	0	0	0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	57° 30'	0.1	0	0	0	0.1	0.1	0	0.1	0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	57° 15'	0.1	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	57° 0'	0.1	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	-0.1	-0.1	-0.1	0	0	0	56° 45'	0.2	0.1	0	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	56° 30'	0.2	0.1	0	0	0.1	0.1	0.1	0.1	0.1	
-0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	0	56° 15'	0.2	0.1	0	0	0.1	0.1	0	0.1	0.1	
-0.1	0	0	0	0	0	0	0	0	56° 0'	0.1	0.1	0	0	0.1	0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	55° 45'	0.1	0	0	0	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	55° 30'	0	0	0	0	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	55° 15'	0.1	0	0	0	0	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	55° 0'	0.1	0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	54° 45'	0.1	0.1	0	0	0	0	0	0	0	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	54° 30'	0.1	0.1	0	0	0.1	0.1	0	0	0	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	54° 15'	0.1	0.1	0	0.1	0.1	0.1	0	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	54° 0'	0.1	0.1	0.1	0.1	0.2	0.1	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	53° 45'	0.1	0.1	0.1	0.2	0.2	0.1	-0.1	-0.1	0	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	53° 30'	0.1	0.1	0.1	0.2	0.1	0	-0.1	-0.1	0	
0	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	53° 15'	0.1	0.2	0.1	0.1	0.1	0	-0.1	-0.1	0	
0	-0.1	-0.1	0	0	0	0	0	0	53° 0'	0.2	0.2	0.1	0.1	0.1	0.1	0	-0.1	-0.1	
0	-0.1	-0.1	-0.1	0	0	0	0	0	52° 45'	0.2	0.2	0.1	0.1	0.1	0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	52° 30'	0.2	0.2	0.1	0.1	0.1	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	52° 15'	0.2	0.2	0.1	0.1	0.1	0	-0.1	-0.1	0	
-0.1	0	0	0	0	0	0	0	0	52° 0'	0.1	0.1	0.1	0.1	0.1	0	0	-0.1	0	
-0.1	0	0	0	0	0	0	0	0	51° 45'	0.1	0.1	0.1	0.1	0.1	0	0	-0.1	0	
0	0	0	0	-0.1	0	0	0	0	51° 30'	0	0.1	0.2	0.2	0.1	0	-0.1	-0.1	0	
0	0	-0.1	-0.1	0	0	0	-0.1	-0.1	51° 15'	0	0.1	0.2	0.2	0.1	0	-0.1	-0.1	0	
0	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	51° 0'	0	0.1	0.2	0.1	0.1	0	0	0	0	
0	-0.1	-0.1	0	0	0	0	-0.1	-0.1	50° 45'	0.1	0.1	0.1	0.1	0.1	0	0	0	-0.1	
0	-0.1	0	0	0	0	0	0	0	50° 30'	0.1	0.1	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	50° 15'	0.1	0.1	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	50° 0'	0.1	0.1	0.1	0.1	0.1	0	-0.1	0	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N
Correction to Latitude
Longitude 136 to 140 °E
Correction to Longitude

Latitude										Longitude									
136°	136°	137°	137°	138°	138°	139°	139°	140°	Longitude	136°	136°	137°	137°	138°	138°	139°	139°	140°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	60° 0'	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	59° 45'	0.2	0.3	0.2	0.1	0.1	0.1	0.2	0.1	0	0
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	59° 30'	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0	0
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	59° 15'	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0	0	0
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	59° 0'	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	58° 45'	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0
-0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	0	58° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0
0	0	0	0	-0.1	-0.1	-0.1	0	0	58° 15'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	-0.1	-0.1
0	0	0	-0.1	-0.1	-0.1	0	0	0	58° 0'	0.1	0.1	0.1	0.2	0.2	0.1	0	-0.1	-0.1	-0.1
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	57° 45'	0.1	0.1	0.2	0.2	0.1	0.1	0	-0.1	-0.1	-0.1
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	57° 30'	0.1	0.2	0.2	0.1	0.1	0	0	-0.1	-0.1	-0.1
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	57° 15'	0.1	0.2	0.1	0.1	0	0	0	0	0	0
-0.1	-0.1	0	0	0	0	0	0	0	57° 0'	0.1	0.1	0.1	0	0	-0.1	0	0	0	0
0	0	0	0	0	0	0	0	0	56° 45'	0.1	0.1	0.1	0	-0.1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	56° 30'	0.1	0.1	0	-0.1	-0.1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	56° 15'	0.1	0.1	0	0	-0.1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	56° 0'	0.1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	55° 45'	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	-0.1	55° 30'	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	-0.1	-0.1	55° 15'	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	-0.1	-0.1	-0.1	55° 0'	0	0.1	0.1	0	0	0	0	0	0	0
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	54° 45'	0	0.1	0.1	0.1	0	0	0	0	0	0
-0.1	-0.1	0	0	0	0	-0.1	-0.1	-0.1	54° 30'	0	0	0	0.1	0.1	0	0	0	0	0
-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	54° 15'	0	0	0	0	0.1	0	0	0	0	0
0	0	0	-0.1	0	0	0	-0.1	-0.1	54° 0'	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	53° 45'	0	0.1	0.1	0	0	0	0.1	0	0	0
0	0	0	0	0	0	0	0	0	53° 30'	0	0.1	0.1	0	0	0	0	0	0	0
-0.1	0	0	0	0	0	0	0	0	53° 15'	0	0.1	0.1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	53° 0'	-0.1	0	0	0	0	0	0	0	0	0
0	0	0	0	-0.1	-0.1	0	0	0	52° 45'	-0.1	0	0.1	0	0.1	0	0	0	0	0
0	0	0	0	-0.1	-0.1	0	0	0	52° 30'	-0.1	0	0.1	0.1	0.1	0	0	0	0	0.1
0	0	0	0	0	0	0	0	0	52° 15'	0	0	0.1	0.1	0.1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	52° 0'	0	0	0.1	0.1	0.1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	51° 45'	0	0	0	0.1	0.1	0	0	0	0	0
0	0	0	0	0	0	-0.1	-0.1	0	51° 30'	0	0	0	0.1	0.1	0	0	0	0	0
-0.1	0	0	0	0	0	-0.1	-0.1	-0.1	51° 15'	0	0	0.1	0.1	0.1	0.1	0	0	0	0
-0.1	-0.1	0	0	0	0	-0.1	-0.1	-0.1	51° 0'	0	0	0	0.1	0.1	0.1	0.1	0	-0.1	-0.1
-0.1	-0.1	0	0	0	0	-0.1	0	0	50° 45'	-0.1	-0.1	0	0.1	0.1	0.1	0.1	0	-0.1	-0.1
0	0	0	0	0	0	0	0	0	50° 30'	0	-0.1	0	0.1	0.1	0.1	0.1	0	-0.1	-0.1
0	0	0	-0.1	-0.1	0	0	0	0	50° 15'	0	0	0	0.1	0.1	0.1	0.1	0	-0.1	-0.1
0	0	0	-0.1	-0.1	-0.1	0	0	0	50° 0'	0	0	0.1	0.1	0.1	0.1	0	0	-0.1	-0.1

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N
Longitude 140 to 144 °E

Correction to Latitude
Correction to Longitude

Latitude										Longitude									
140°	140°	141°	141°	142°	142°	143°	143°	144°	Longitude	140°	140°	141°	141°	142°	142°	143°	143°	144°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	0.1	0	0	0	0	0	0.1	0.2	0.1	
0	0	0	0	0	0	0	0	0	59° 45'	0	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 30'	0	0	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 15'	0	0	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 0'	0	0	0	0	-0.1	-0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	58° 45'	0	0	0	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	58° 30'	0	-0.1	0	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	-0.1	-0.1	58° 15'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	-0.1	-0.1	58° 0'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	-0.1	57° 45'	-0.1	-0.1	-0.1	0	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	-0.1	57° 30'	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	-0.1	-0.1	57° 15'	0	0	-0.1	-0.1	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	57° 0'	0	0	0	-0.1	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	56° 45'	0	0	0	0	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	56° 30'	0	0	0	0	0	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	56° 15'	0	0	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	56° 0'	0	0	0.1	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	55° 45'	0	0	0.1	0.1	0	0	0	0.1	0.1	
-0.1	0	0	0	0	0	0	0	0	55° 30'	0	0	0	0.1	0.1	0	0	0	0.1	
-0.1	-0.1	0	0	0	0	0	-0.1	0	55° 15'	0	0	0	0.1	0.1	0.1	0	0	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	55° 0'	0	-0.1	0	0.1	0.1	0.1	0	-0.1	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	54° 45'	0	0	0	0	0.1	0.1	0	-0.1	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	54° 30'	0	-0.1	-0.1	0	0.1	0.1	0	-0.1	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	54° 15'	0	-0.1	-0.1	-0.1	0	0.1	0	-0.1	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	54° 0'	0	-0.1	-0.1	-0.1	0	0.1	0.1	-0.1	-0.2	
0	0	-0.1	-0.1	-0.1	0	0	0	0	53° 45'	0	-0.1	-0.1	-0.1	0	0.1	0.1	-0.1	-0.2	
0	0	-0.1	-0.1	-0.1	0	0	0	0	53° 30'	0	0	-0.1	-0.1	0	0.1	0	-0.1	-0.2	
0	0	-0.1	-0.1	-0.1	0	0	0	0	53° 15'	0	0	0	-0.1	0	0	0	-0.1	-0.1	
0	-0.1	0	0	0	0	0	0	0	53° 0'	0	0	0	-0.1	0	0	0	0	-0.1	
0	-0.1	0	0	0	0	0	0	0	52° 45'	0	0	-0.1	-0.1	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	52° 30'	0.1	0	-0.1	-0.1	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	52° 15'	0	-0.1	-0.1	-0.1	0	-0.1	-0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	52° 0'	0	-0.1	-0.1	0	0	0	-0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	51° 45'	0	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	-0.1	0	0	51° 30'	0	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	
-0.1	0	0	0	0	-0.1	-0.1	-0.1	0	51° 15'	0	-0.1	-0.1	-0.1	0	0.1	0	-0.1	-0.1	
-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1	51° 0'	-0.1	-0.1	-0.1	-0.1	0.1	0.1	0	-0.1	-0.1	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	50° 45'	-0.1	-0.1	-0.1	0	0.1	0.1	0	-0.2	-0.2	
0	0	0	0	0	0	0	-0.1	-0.1	50° 30'	-0.1	-0.1	-0.1	0	0.1	0.1	0	-0.1	-0.2	
0	0	0	0	0	0	0	0	-0.1	50° 15'	-0.1	-0.1	-0.1	0	0.1	0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	-0.1	50° 0'	-0.1	-0.1	-0.1	0	0.1	0.1	0	0	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 144 to 148 °E									
Correction to Latitude										Correction to Longitude									
144°	144°	145°	145°	146°	146°	147°	147°	148°	Longitude	144°	144°	145°	145°	146°	146°	147°	147°	148°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	0.1	0	0	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	59° 45'	0.1	0	0	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	59° 30'	0.1	0.1	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 15'	0.1	0.1	0.1	0.1	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 0'	0.1	0	0.1	0.1	0.1	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	58° 45'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	58° 30'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	58° 15'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 0'	0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	57° 45'	0	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	57° 30'	0	0.1	0.2	0.1	0.1	0	0.1	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	57° 15'	0	0.1	0.2	0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	57° 0'	0	0.1	0.2	0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	56° 45'	0	0.1	0.2	0.1	0.1	0	0	0	0	
0	-0.1	-0.1	0	0	0	0	0	0	56° 30'	0	0.1	0.1	0.1	0.1	0	0	0	0	
0	-0.1	-0.1	0	0	0	0	0	0	56° 15'	0.1	0.1	0.1	0	0	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	56° 0'	0.1	0.1	0.1	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	55° 45'	0.1	0.2	0.1	0	0	0	0	0	0.1	
0	0.1	0.1	0.1	0	0	0	0	0	55° 30'	0.1	0.1	0.1	0.1	0	0	0	0	0	
0	0	0.1	0.1	0.1	0	0	0	0	55° 15'	0	0.1	0.1	0.1	0.1	0	0	0	0	
0	0	0.1	0.1	0.1	0.1	0	0	0	55° 0'	-0.1	0	0.1	0.1	0.1	0.1	0	0	0.1	
0	0	0	0	0.1	0.1	0	0	0	54° 45'	-0.1	0	0	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 30'	-0.1	-0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 15'	-0.1	-0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 0'	-0.2	-0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	53° 45'	-0.2	-0.1	0	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	53° 30'	-0.2	-0.1	0	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	53° 15'	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	53° 0'	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	52° 45'	-0.1	-0.1	-0.1	0	0.1	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	52° 30'	-0.1	-0.1	-0.1	0	0.1	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	52° 15'	-0.1	-0.1	-0.1	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	52° 0'	-0.1	-0.1	-0.1	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	51° 45'	-0.1	-0.1	-0.1	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	51° 30'	-0.1	-0.1	-0.1	0	0	0	0	0.1	0.1	
0	0	0	-0.1	0	0	0	0	0	51° 15'	-0.1	-0.1	0	0	0	0	0	0	0.1	
-0.1	0	0	0	0	0	0	0	0	51° 0'	-0.1	-0.1	0	0	0	0	0	0	0	
-0.1	-0.1	0	0	0	0	0	0	0	50° 45'	-0.2	-0.1	0	0	0	0	0	0.1	0	
-0.1	-0.1	0	0	0	0	0	0	-0.1	50° 30'	-0.2	-0.1	0	0	0	0	0	0.1	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	50° 15'	-0.1	-0.2	-0.1	0	0	0	0.1	0	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	50° 0'	-0.1	-0.1	-0.1	0	0	0	0.1	0	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 148 to 152 °E									
Correction to Latitude										Correction to Longitude									
148°	148°	149°	149°	150°	150°	151°	151°	152°	Longitude	148°	148°	149°	149°	150°	150°	151°	151°	152°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	59° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	59° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	59° 15'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	59° 0'	0.1	0.1	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 45'	0.1	0.1	0.1	0.1	0.1	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	58° 30'	0.1	0.1	0.1	0.1	0.1	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	58° 15'	0.1	0.1	0.1	0.1	0.1	0	0	-0.1	-0.1	
-0.1	0	0	0	0	0	0	0	0	58° 0'	0	0	0.1	0.1	0	0	0	0	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	57° 45'	0	0	0	0	0	0	0	0	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	57° 30'	0	0	0	0	0	0	0	0	-0.1	0
0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	57° 15'	0	0	0	0	0	0	0	0	-0.1	0
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	57° 0'	0	0	0	0	0	0	-0.1	-0.1	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	0	-0.1	56° 45'	0	0	0	0	0	-0.1	-0.1	-0.1	0	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	56° 30'	0	0.1	0	0	0	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	-0.1	-0.1	56° 15'	0	0.1	0	0	0	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	-0.1	-0.1	56° 0'	0.1	0	0	0	0	0	-0.1	0	0	
0	0	0	0	0	0	0	0	-0.1	55° 45'	0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	55° 30'	0	0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	55° 15'	0	0.1	0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	55° 0'	0.1	0.1	0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	54° 45'	0.1	0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	54° 30'	0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	54° 15'	0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	54° 0'	0.1	0	0.1	0.1	0	0	0.1	0	0	
0	0	0	0	0	0	0	0	0	53° 45'	0	0	0.1	0.1	0	0	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	53° 30'	0	0	0.1	0.1	0	0	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	53° 15'	0.1	0	0	0	0	0	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	53° 0'	0.1	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	52° 45'	0.1	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	52° 30'	0.1	0.1	0.1	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	52° 15'	0.1	0.1	0.1	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	52° 0'	0.1	0.1	0.1	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	51° 45'	0.1	0.1	0.1	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	51° 30'	0.1	0.1	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	51° 15'	0.1	0	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	51° 0'	0	0	0	0.1	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	50° 45'	0	0	0	0.1	0	0	0	0.1	0.1	
0	0	-0.1	-0.1	0	0	-0.1	0	0	50° 30'	0	0	0.1	0	0	0	0	0	0.1	
0	0	-0.1	0	0	-0.1	-0.1	-0.1	0	50° 15'	0	0	0.1	0	0	0.1	0	0	0.1	
0	0	0	0	0	0	-0.1	-0.1	0	50° 0'	0	0.1	0.1	0	0	0.1	0	0	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N Correction to Latitude										Longitude 152 to 156 °E Correction to Longitude									
152° 0'	152° 30'	153° 0'	153° 30'	154° 0'	154° 30'	155° 0'	155° 30'	156° 0'	Longitude	152° 0'	152° 30'	153° 0'	153° 30'	154° 0'	154° 30'	155° 0'	155° 30'	156° 0'	
Latitude																			
0	0	0	0	0	0	0	0	0	60° 0'	0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 45'	0	0	0	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 30'	0	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 15'	0	-0.1	-0.1	-0.1	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	59° 0'	0	-0.1	-0.1	-0.1	0	0	0	0	0	
0	0.1	0	0	0	0	0	0	0	58° 45'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 30'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 15'	-0.1	0	0	0.1	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	-0.1	58° 0'	-0.1	0	0.1	0.1	0	-0.1	0	0.1	0.2	
0	0	0	0	0	0	0	-0.1	-0.1	57° 45'	0	0	0.1	0.1	0	-0.1	0	0.1	0.2	
0	0	0	0	0	0	-0.1	-0.1	-0.1	57° 30'	0	0	0.1	0.1	0	0	0	0.2	0.2	
0	0	0	0	0	0	-0.1	-0.1	-0.1	57° 15'	0	0	0.1	0.1	0	0	0.1	0.1	0.2	
0	0	0	0	0	-0.1	-0.1	-0.1	0	57° 0'	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	
-0.1	0	0	0	0	0	-0.1	-0.1	-0.1	56° 45'	0	0	0	0.1	0.2	0.2	0.1	0.1	0.1	
-0.1	-0.1	0	0	0	0	-0.1	-0.1	-0.1	56° 30'	0	0	-0.1	0	0.2	0.2	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	56° 15'	0	-0.1	-0.1	0	0.2	0.2	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	0	56° 0'	0	-0.1	-0.1	0	0.2	0.2	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	55° 45'	0	0	0	0	0.1	0.2	0.1	0.1	0	
0	-0.1	-0.1	0	0	0	0	0	0	55° 30'	0	0	0	0	0.1	0.2	0.1	0	0	
0	0	0	0	0	0	0	0	0	55° 15'	0	0	-0.1	0	0.1	0.2	0.1	0	0.1	
0	0	0	0	0	0	0	0	0	55° 0'	0	0	0	0	0.1	0.2	0.1	0	0.1	
0	0	0	0	0	0	0	0	0	54° 45'	0	0	0	0	0.1	0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	54° 30'	0	0	0	0	0.1	0.1	0	0	0.1	
0	0	0	0	0	0	0	0	-0.1	54° 15'	0	0	0	0	0.1	0.1	0	0	0.1	
0	0	0	0	0	0	0	0	-0.1	54° 0'	0	0	0	0	0.1	0.1	0.1	0	0.1	
0	0	0	0	0	0	0	0	0	53° 45'	0	0	0	0	0.1	0.1	0.1	0	0.1	
0	0	0	0	0	0	0	0	0	53° 30'	0	0	0.1	0	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	53° 15'	0	0.1	0.1	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	53° 0'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	52° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	52° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	52° 15'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	52° 0'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	51° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	51° 30'	0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	
0	0	0	0	0	0	0	0	-0.1	51° 15'	0.1	0.1	0.1	0.1	0.1	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	-0.1	51° 0'	0.1	0.1	0.1	0.1	0	0	0	0.2	0.2	
0	0	0	0	0	0	0	0	0	50° 45'	0.1	0.1	0.1	0.1	0	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	50° 30'	0.1	0.1	0.1	0	0	0	0.1	0.2	0.1	
0	0	0	0	0	-0.1	-0.1	0	0.1	50° 15'	0.1	0.1	0.1	0	0	0.1	0.1	0.2	0	
0	0	0	0	0	-0.1	-0.1	0	0.1	50° 0'	0	0	0	0	0.1	0.1	0.1	0	-0.3	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N
Longitude 156 to 160 °E

Correction to Latitude
Correction to Longitude

Latitude										Longitude									
156°	156°	157°	157°	158°	158°	159°	159°	160°		156°	156°	157°	157°	158°	158°	159°	159°	160°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.1	-0.1	0	0	-0.1	0	0	0.1	0.2	
0	0	0	0	0	0	-0.1	-0.1	0	59° 45'	-0.1	-0.1	0	0	0	0	0	0.1	0.2	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	0	59° 30'	-0.1	-0.1	-0.1	0	0	0	0.1	0.1	0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	59° 15'	-0.1	-0.1	0	0	0	0.1	0.1	0.1	0.1	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	59° 0'	0	0	0	0	0	0.1	0.1	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	58° 45'	0	0	0.1	0.1	0	0	0	0	0	
0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	58° 30'	0	0.1	0.1	0.1	0	-0.1	-0.1	-0.1	0	
0	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	0	58° 15'	0.1	0.1	0.1	0.1	0	-0.1	-0.1	0	0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	0	58° 0'	0.2	0.2	0.1	0	-0.1	-0.1	-0.1	0	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	57° 45'	0.2	0.2	0.1	0	-0.1	-0.1	0	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	57° 30'	0.2	0.2	0.1	0	-0.1	0	0	0	0	
-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	57° 15'	0.2	0.2	0.1	0	0	0	0	0	0	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	0	57° 0'	0.1	0.1	0.1	0	0	0	0	-0.1	-0.1	
-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	0	56° 45'	0.1	0.1	0.1	0.1	0	0	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	56° 30'	0.1	0.1	0.1	0.1	0.1	0	0	-0.1	-0.2	
-0.1	0	-0.1	-0.1	-0.1	-0.1	0	0	0	56° 15'	0.1	0.1	0.1	0.1	0.1	0	-0.1	-0.2	-0.1	
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	56° 0'	0.1	0.1	0.2	0.2	0.1	-0.1	-0.2	-0.2	-0.1	
0	0	-0.1	-0.1	-0.1	0	0	0	0	55° 45'	0	0.1	0.3	0.2	0	-0.3	-0.3	-0.1	0	
0	0	-0.1	0	0	0	0	0	0	55° 30'	0	0.2	0.3	0.2	-0.1	-0.3	-0.3	-0.1	0	
0	0	-0.1	0	0	0	-0.1	-0.1	0	55° 15'	0.1	0.2	0.3	0.1	-0.2	-0.3	-0.1	0	0	
0	0	0	0	0	0	-0.1	-0.1	0	55° 0'	0.1	0.3	0.3	0.1	-0.2	-0.2	-0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	54° 45'	0.1	0.3	0.3	0	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	54° 30'	0.1	0.3	0.3	0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
-0.1	0	0	0	0	0	0	0	0	54° 15'	0.1	0.3	0.2	0.1	-0.1	-0.2	-0.2	-0.1	-0.2	
-0.1	0	0	0	0	0	0	0	0	54° 0'	0.1	0.2	0.2	0.1	-0.1	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	53° 45'	0.1	0.2	0.1	0.1	0	-0.1	-0.2	-0.2	-0.5	
0	0	0	0	0	0.1	0.1	0.1	0	53° 30'	0	0.1	0.1	0	-0.1	-0.1	-0.2	-0.3	-0.6	
0	0	0	0	0	0.1	0.1	0.2	0	53° 15'	0	0.1	0.1	0	-0.1	-0.2	-0.2	-0.3	-0.7	
0	0	0	0	0	0.1	0.2	0.3	0	53° 0'	0	0.1	0.1	0	-0.2	-0.3	-0.3	-0.3	-0.6	
0	0	0	0	0	0.1	0.3	0.5	0	52° 45'	0	0	0.1	0.1	-0.2	-0.5	-0.5	-0.3	-0.5	
0	0	0	0	0	0.1	0.3	0.5	0	52° 30'	0	0	0.1	0.1	-0.3	-0.7	-0.8	-0.5	-0.4	
0	0	0	0	0	0.1	0.2	0.4	0	52° 15'	0	0	0	0	-0.3	-0.9	-1.1	-0.7	-0.4	
0	0	0	0	0	0.1	0.1	0.2	0	52° 0'	0.1	0	0.1	0	-0.4	-1	-1.2	-0.8	-0.5	
0	0	0	0	0	0.1	0.1	0.1	0	51° 45'	0.1	0.1	0.1	0	-0.5	-1.1	-1.2	-0.9	-0.5	
0	0	0	0	0.1	0.2	0.2	0.1	0	51° 30'	0.1	0.1	0.1	-0.1	-0.6	-1.1	-1.1	-0.8	-0.3	
-0.1	-0.1	0	0.1	0.2	0.3	0.3	0.2	0	51° 15'	0.1	0.1	0.1	-0.2	-0.7	-1.2	-1.1	-0.6	-0.1	
-0.1	-0.1	0	0.2	0.3	0.3	0.2	0.1	0	51° 0'	0.2	0.1	-0.1	-0.4	-0.8	-1.2	-1	-0.4	0.1	
0	0	0.2	0.3	0.4	0.4	0.2	0	0	50° 45'	0.2	0	-0.3	-0.6	-0.9	-1	-0.8	-0.2	0.3	
0	0.2	0.3	0.5	0.5	0.4	0.1	-0.1	0	50° 30'	0.1	-0.2	-0.5	-0.7	-0.9	-0.8	-0.4	0	0.3	
0.1	0.3	0.4	0.5	0.5	0.3	0	-0.2	0	50° 15'	0	-0.4	-0.7	-0.8	-0.8	-0.5	-0.1	0.2	0.3	
0.1	0.3	0.5	0.5	0.4	0.1	-0.1	-0.2	0	50° 0'	-0.3	-0.6	-0.8	-0.8	-0.6	-0.2	0.1	0.3	0.3	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 160 to 164 °E									
Correction to Latitude										Correction to Longitude									
160°	160°	161°	161°	162°	162°	163°	163°	164°	Longitude	160°	160°	161°	161°	162°	162°	163°	163°	164°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	60° 0'	0.2	0.1	0	-0.1	-0.2	-0.2	0	0	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	59° 45'	0.2	0.1	0	-0.2	-0.3	-0.2	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	59° 30'	0.1	0.1	0	-0.2	-0.3	-0.2	-0.1	0	0	
-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	59° 15'	0.1	0.1	0	-0.1	-0.3	-0.2	-0.1	0	0	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	0	59° 0'	0	0.1	0	-0.1	-0.2	-0.2	-0.1	0	-0.1	
0	0	0	0	0	0	-0.1	0	0	58° 45'	0	0.1	0	-0.1	-0.2	-0.2	-0.1	-0.1	-0.3	
0	-0.1	-0.1	0	0	0	0	0	0.1	58° 30'	0	0.1	0	-0.1	-0.2	-0.2	-0.1	-0.2	-0.4	
-0.1	-0.1	-0.1	0	0	0	0	0	0.1	58° 15'	0.1	0.1	0	-0.2	-0.2	-0.1	-0.1	-0.3	-0.4	
-0.1	-0.1	0	0	0	0	0	0.1	0	58° 0'	0.1	0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.4	
-0.1	0	0	0	0	0	0	0.1	0	57° 45'	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.2	
-0.1	0	0	0	0	0	0	0.1	0.1	57° 30'	0	0	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	
0	0	0	0	0	0	0	0	0.1	57° 15'	0	-0.1	-0.1	-0.2	-0.3	-0.3	-0.4	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	57° 0'	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.4	-0.4	-0.3	
0	0	0	0.1	0.1	0.1	0	0	0	56° 45'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.4	-0.4	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	56° 30'	-0.2	-0.2	-0.3	-0.3	-0.2	-0.1	-0.3	-0.5	-0.4	
0	0	0	0	0.1	0.2	0.2	0.3	0.2	56° 15'	-0.1	-0.2	-0.3	-0.4	-0.3	-0.2	-0.3	-0.5	-0.4	
0	0	-0.1	0	0.1	0.3	0.4	0.4	0.4	56° 0'	-0.1	-0.1	-0.3	-0.5	-0.5	-0.4	-0.4	-0.4	-0.2	
0	0	0	0	0.1	0.3	0.5	0.5	0.4	55° 45'	0	-0.1	-0.4	-0.6	-0.7	-0.7	-0.6	-0.4	0	
-0.1	0	0	0	0	0.2	0.4	0.4	0.3	55° 30'	0	-0.1	-0.4	-0.7	-1	-1	-0.7	-0.3	0.2	
-0.1	0	0	-0.1	-0.1	0	0.1	0.1	0.1	55° 15'	0	-0.1	-0.3	-0.7	-1.1	-1.2	-0.8	-0.2	0.2	
0	0	0	0	-0.1	-0.1	0	0	-0.1	55° 0'	-0.1	-0.2	-0.2	-0.5	-1.1	-1.4	-0.9	-0.1	0.2	
0	0	0.1	0.1	0.1	0	0	-0.1	-0.1	54° 45'	-0.2	-0.2	-0.2	-0.5	-1.1	-1.4	-0.8	0	0.3	
0	0.1	0.2	0.3	0.3	0.2	0.1	0	-0.1	54° 30'	-0.2	-0.3	-0.3	-0.5	-1	-1.2	-0.7	0.2	0.4	
0	0.1	0.3	0.5	0.5	0.3	0.1	-0.1	-0.1	54° 15'	-0.2	-0.4	-0.6	-0.7	-0.9	-0.9	-0.4	0.3	0.5	
0.1	0.2	0.4	0.5	0.5	0.3	0	-0.2	-0.2	54° 0'	-0.3	-0.6	-0.9	-0.9	-0.8	-0.5	0	0.5	0.5	
0.1	0.3	0.4	0.4	0.4	0.2	0	-0.2	-0.2	53° 45'	-0.5	-0.9	-1.1	-0.9	-0.6	-0.1	0.3	0.6	0.4	
0.1	0.2	0.3	0.3	0.2	0.1	0	-0.1	-0.2	53° 30'	-0.6	-1	-1.1	-0.9	-0.4	0.1	0.6	0.7	0.4	
0.2	0.2	0.2	0.2	0.1	0	-0.1	-0.1	-0.1	53° 15'	-0.7	-1.1	-1.2	-0.8	-0.3	0.2	0.7	0.7	0.4	
0.3	0.2	0.1	0.1	-0.1	-0.2	-0.2	-0.1	0	53° 0'	-0.6	-1.1	-1.1	-0.7	-0.1	0.3	0.6	0.7	0.4	
0.5	0.3	0.2	0	-0.1	-0.2	-0.2	-0.1	0	52° 45'	-0.5	-0.9	-1	-0.5	0.1	0.4	0.5	0.5	0.3	
0.6	0.5	0.3	0	-0.2	-0.2	-0.2	-0.1	0	52° 30'	-0.4	-0.6	-0.7	-0.2	0.3	0.5	0.4	0.3	0.2	
0.5	0.4	0.2	-0.1	-0.2	-0.2	-0.1	0	0	52° 15'	-0.4	-0.4	-0.3	0.1	0.4	0.4	0.3	0.2	0.1	
0.2	0.2	0	-0.2	-0.2	-0.2	-0.1	0	0	52° 0'	-0.5	-0.3	0	0.4	0.4	0.3	0.2	0.2	0.1	
0.1	0	-0.1	-0.2	-0.2	-0.1	-0.1	0	0	51° 45'	-0.5	-0.1	0.2	0.5	0.4	0.2	0.1	0.1	0.1	
0	-0.1	-0.2	-0.2	-0.1	-0.1	0	0	0	51° 30'	-0.3	0	0.4	0.5	0.3	0.1	0.1	0.1	0	
0	-0.2	-0.2	-0.2	-0.1	0	0	0	0	51° 15'	-0.1	0.2	0.4	0.3	0.1	0	0.1	0	0	
-0.1	-0.2	-0.2	-0.1	-0.1	0	0	0	0	51° 0'	0.1	0.3	0.4	0.2	0.1	0	0.1	0	-0.1	
-0.1	-0.2	-0.2	-0.1	-0.1	0	0	0	0	50° 45'	0.3	0.4	0.3	0.1	0	0	0	0	-0.1	
-0.2	-0.2	-0.1	0	0	0	0	0	0	50° 30'	0.3	0.3	0.2	0.1	0	0	0	-0.1	-0.1	
-0.2	-0.1	-0.1	0	0	0	0	0	0	50° 15'	0.3	0.3	0.1	0	0	0	-0.1	-0.1	-0.1	
-0.2	-0.1	-0.1	0	0	0	0	0	0	50° 0'	0.3	0.2	0	0	0	0	-0.1	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 164 to 168 °E									
Correction to Latitude										Correction to Longitude									
164° 0'	164° 30'	165° 0'	165° 30'	166° 0'	166° 30'	167° 0'	167° 30'	168° 0'	Longitude	164° 0'	164° 30'	165° 0'	165° 30'	166° 0'	166° 30'	167° 0'	167° 30'	168° 0'	
									Latitude										
0	0	0	0	0	0	0.1	0.1	0.2	60° 0'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0.1	0.1	0.2	59° 45'	0	-0.1	-0.1	-0.1	-0.1	-0.3	-0.4	-0.4	-0.3	
0	0	0	0	0	0.1	0.1	0.1	0.1	59° 30'	0	-0.1	-0.1	-0.1	-0.2	-0.4	-0.5	-0.4	-0.3	
0	0	0.1	0.1	0.2	0.2	0.1	0	0	59° 15'	0	-0.1	-0.1	-0.2	-0.3	-0.4	-0.4	-0.3	-0.2	
0	0.1	0.2	0.2	0.2	0.2	0.1	0	-0.1	59° 0'	-0.1	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	-0.1	
0	0.1	0.2	0.1	0.1	0	0	-0.1	-0.1	58° 45'	-0.3	-0.4	-0.4	-0.3	-0.2	-0.1	0	-0.1	-0.1	
0.1	0.1	0.1	0	0	-0.1	-0.1	-0.1	0	58° 30'	-0.4	-0.5	-0.4	-0.2	-0.1	0	0	-0.1	-0.1	
0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	0	58° 15'	-0.4	-0.4	-0.2	-0.1	0	0	-0.1	-0.1	-0.2	
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	58° 0'	-0.4	-0.3	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	-0.1	-0.1	0	0	0	0	0	57° 45'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0.1	0	0	0	0	0	0	0	0	57° 30'	-0.2	0	0	-0.1	-0.2	-0.1	-0.1	-0.2	-0.3	
0.1	0.1	0.1	0	0	0	0	0	0	57° 15'	-0.2	0	0	-0.1	-0.2	-0.1	-0.1	-0.2	-0.3	
0	0.1	0.1	0	0	0	0	0	0	57° 0'	-0.3	0	0.1	0	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0.1	0.1	0.1	0	0	0	0	0	56° 45'	-0.4	-0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0	0.1	0.1	0	0	0	56° 30'	-0.4	-0.1	0.1	0.1	0	0	0	-0.1	-0.2	
0.2	0.1	0	0	0	0.1	0.1	0	0	56° 15'	-0.4	0	0.2	0.1	-0.1	0	0	-0.1	-0.2	
0.4	0.2	0.1	0	-0.1	0	0	0.1	0	56° 0'	-0.2	0.2	0.4	0.1	-0.2	-0.1	0	0	-0.1	
0.4	0.3	0.2	0	-0.1	-0.2	-0.1	0	0	55° 45'	0	0.5	0.6	0.3	-0.1	-0.2	-0.1	0	-0.1	
0.3	0.3	0.3	0.2	0	-0.2	-0.2	-0.1	0	55° 30'	0.2	0.6	0.7	0.6	0.2	-0.2	-0.3	-0.2	-0.1	
0.1	0.1	0.3	0.4	0.2	-0.1	-0.2	-0.2	-0.1	55° 15'	0.2	0.4	0.6	0.8	0.6	0.1	-0.4	-0.4	-0.2	
-0.1	0	0.2	0.4	0.4	0.2	0	-0.1	-0.1	55° 0'	0.2	0.1	0.2	0.8	1	0.5	-0.2	-0.5	-0.4	
-0.1	-0.2	0	0.2	0.4	0.4	0.3	0.1	0	54° 45'	0.3	-0.1	-0.2	0.4	1	0.8	0.1	-0.3	-0.4	
-0.1	-0.2	-0.2	-0.1	0.2	0.5	0.5	0.4	0.2	54° 30'	0.4	-0.1	-0.3	0	0.6	0.7	0.4	0	-0.2	
-0.1	-0.2	-0.3	-0.3	-0.1	0.3	0.5	0.5	0.4	54° 15'	0.5	0.1	-0.3	-0.3	0	0.2	0.3	0.2	0.1	
-0.2	-0.2	-0.2	-0.3	-0.2	0	0.2	0.4	0.4	54° 0'	0.5	0.2	-0.1	-0.3	-0.3	-0.2	0	0.2	0.2	
-0.2	-0.1	-0.1	-0.2	-0.3	-0.2	-0.1	0.1	0.3	53° 45'	0.4	0.1	0	-0.2	-0.4	-0.5	-0.3	-0.1	0.1	
-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.2	0	53° 30'	0.4	0	0	-0.1	-0.3	-0.5	-0.5	-0.3	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.2	53° 15'	0.4	0	-0.1	-0.1	-0.2	-0.4	-0.4	-0.4	-0.4	
0	0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	53° 0'	0.4	0.1	0	-0.1	-0.2	-0.3	-0.3	-0.4	-0.5	
0	0	0	0	-0.1	-0.1	-0.1	-0.2	-0.2	52° 45'	0.3	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.3	-0.4	
0	0	0.1	0	0	-0.1	-0.1	-0.1	-0.1	52° 30'	0.2	0.1	0	0	-0.1	-0.2	-0.2	-0.2	-0.3	
0	0	0.1	0.1	0	0	-0.1	-0.1	-0.1	52° 15'	0.1	0.1	0	0	0	-0.1	-0.2	-0.2	-0.2	
0	0	0	0.1	0.1	0	0	0	-0.1	52° 0'	0.1	0	0	0	0	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0.1	0.1	0	0	0	51° 45'	0.1	0	0	0	0	0	-0.1	-0.1	-0.2	
0	0	0	0	0.1	0.1	0.1	0	0	51° 30'	0	0	0	-0.1	-0.1	0	0	-0.1	-0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	51° 15'	0	0	0	-0.1	-0.1	0	0.1	-0.1	-0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 0'	-0.1	0	0	-0.1	-0.1	0	0.1	-0.1	-0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 45'	-0.1	0	0	-0.1	-0.1	0	0.1	-0.1	-0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	50° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0	-0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	50° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	-0.2	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	50° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.1	0.1	-0.2	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 168 to 172 °E									
Correction to Latitude										Correction to Longitude									
168°	168°	169°	169°	170°	170°	171°	171°	172°	Longitude	168°	168°	169°	169°	170°	170°	171°	171°	172°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	60° 0'	-0.3	-0.1	0.1	0.2	-0.1	-0.6	-0.9	-0.7	-0.2	
0.2	0.2	0.2	0.2	0.1	0.1	0	0	-0.1	59° 45'	-0.3	-0.2	0.1	0.2	0	-0.5	-0.8	-0.6	-0.2	
0.1	0	0	0.1	0.1	0	0	-0.1	-0.1	59° 30'	-0.3	-0.1	0.1	0.2	0.1	-0.3	-0.6	-0.5	-0.2	
0	0	0	0	0	0	-0.1	-0.1	-0.1	59° 15'	-0.2	-0.1	0.1	0.2	0.1	-0.3	-0.5	-0.5	-0.3	
-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	59° 0'	-0.1	-0.1	0	0.2	0.1	-0.2	-0.5	-0.5	-0.3	
-0.1	-0.1	0	0	0	0	-0.1	-0.1	-0.1	58° 45'	-0.1	-0.1	0	0.1	0.1	-0.1	-0.4	-0.5	-0.3	
0	0	0	0	0	0	0	-0.1	-0.1	58° 30'	-0.1	-0.1	0	0.1	0.1	-0.1	-0.3	-0.5	-0.4	
0	0	0	0	0	0	0	0	0	58° 15'	-0.2	-0.1	0	0.1	0.1	0	-0.3	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	58° 0'	-0.2	-0.1	0	0.1	0.1	-0.1	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	57° 45'	-0.2	-0.2	0	0.1	0	-0.1	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	57° 30'	-0.3	-0.2	0	0.1	0.1	-0.1	-0.2	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	57° 15'	-0.3	-0.2	0	0.1	0	-0.1	-0.2	-0.3	-0.2	
0	-0.1	-0.1	0	0	0	0	0	0	57° 0'	-0.2	-0.1	-0.1	0	0	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	56° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	56° 30'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	56° 15'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	0	
0	0	0	0	0.1	0.1	0.1	0	0	55° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	0	
0	0	0	0	0	0.1	0.1	0	0	55° 30'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	
-0.1	0	0	0	0	0	0	0	0	55° 15'	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	0	0.1	
-0.1	0	0	0	0	0	0	0	0.1	55° 0'	-0.4	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	0	0.1	
0	0	0	0	0	0	0	0	0.1	54° 45'	-0.4	-0.3	-0.2	-0.1	-0.2	-0.3	-0.2	-0.1	0	
0.2	0.1	0	0	0	0	0	0	0	54° 30'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.1	0	
0.4	0.2	0.1	0	0	0	0	-0.1	-0.1	54° 15'	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.4	0.4	0.2	0.1	0	0	-0.1	-0.1	-0.1	54° 0'	0.2	0.2	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0.3	0.3	0.3	0.2	0	-0.1	-0.1	-0.1	-0.1	53° 45'	0.1	0.3	0.3	0.2	0	0	-0.1	-0.1	-0.1	
0	0.2	0.3	0.2	0.1	0	0	-0.1	-0.1	53° 30'	-0.1	0.2	0.4	0.4	0.2	0.1	-0.1	-0.1	-0.1	
-0.2	0	0.1	0.3	0.2	0.2	0.1	0.1	-0.1	53° 15'	-0.4	-0.1	0.2	0.4	0.4	0.2	0	-0.1	0	
-0.3	-0.2	0	0.1	0.3	0.3	0.3	0.3	0.1	53° 0'	-0.5	-0.3	0	0.2	0.3	0.3	0.1	0.1	0.2	
-0.2	-0.2	-0.2	0	0.1	0.3	0.4	0.4	0.3	52° 45'	-0.4	-0.4	-0.3	0	0.1	0.1	0.1	0.3	0.5	
-0.1	-0.2	-0.2	-0.2	-0.1	0.1	0.2	0.4	0.5	52° 30'	-0.3	-0.4	-0.3	-0.2	-0.1	-0.1	0	0.2	0.6	
-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	0.1	0.3	52° 15'	-0.2	-0.3	-0.3	-0.2	-0.3	-0.3	-0.2	0	0.3	
-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.2	0	52° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	51° 45'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.4	-0.4	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	51° 30'	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.3	-0.4	
0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	51° 15'	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	
0.1	0.1	0	0	-0.1	-0.1	-0.1	0	-0.1	51° 0'	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0	0	0	-0.1	-0.1	0	50° 45'	-0.2	0	0	0	-0.1	-0.1	-0.1	-0.2	-0.1	
0	0.1	0.1	0.1	0	0	0	0	-0.1	50° 30'	-0.2	-0.1	0.1	0	0	0	-0.1	-0.2	-0.2	
0	0.1	0.2	0.1	0.1	0.1	0.1	0	0	50° 15'	-0.2	-0.2	0	0.1	0	0	0	-0.1	-0.1	
0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0	50° 0'	-0.2	-0.3	0	0.1	0.1	0	0	0	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 172 to 176 °E										
Correction to Latitude										Correction to Longitude										
172° 0'	172° 30'	173° 0'	173° 30'	174° 0'	174° 30'	175° 0'	175° 30'	176° 0'	Longitude	172° 0'	172° 30'	173° 0'	173° 30'	174° 0'	174° 30'	175° 0'	175° 30'	176° 0'		
										Latitude										
0.1	0.1	0	0	0	0	0	-0.1	-0.1	60° 0'	-0.2	0	0	-0.1	-0.1	-0.1	0	0	0.1		
-0.1	0	0	0	0	0	-0.1	-0.1	-0.1	59° 45'	-0.2	0	0	0	0	0	0	0	0.1		
-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	59° 30'	-0.2	0	0	0	0	0	0	0	0.1		
-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	59° 15'	-0.3	-0.1	0	0	0	0	0	0	0		
-0.1	0	0	-0.1	-0.1	0	-0.1	-0.1	-0.1	59° 0'	-0.3	-0.1	0	0	0	0	0	0	0		
-0.1	0	0	-0.1	0	0	0	0	0	58° 45'	-0.3	-0.1	0	0	0	0	0	0	-0.1		
-0.1	-0.1	0	0	0	0	0	0	0	58° 30'	-0.4	-0.1	0	0	0	0	0	0	-0.1		
0	0	0	0	0	0	0	0	0	58° 15'	-0.4	-0.2	0	0	0	-0.1	0	0	-0.1		
0	0	0	0	0	0	0	0	0	58° 0'	-0.3	-0.2	0	0	0	-0.1	0	0	0		
0	0	0	0	0	0	0	0	0	57° 45'	-0.3	-0.1	0	0	0	-0.1	0	0	0		
0	0	0	0	0	0	0	0	0	57° 30'	-0.2	-0.1	0	0	0	0	0	0	0		
0	0	0	0	0	0	0	0	0	57° 15'	-0.2	-0.1	0	0	0	0	-0.1	0	0		
0	0	0	0	0	0	0	0	0	57° 0'	-0.2	-0.1	0	0	0	0	-0.1	-0.1	0		
0	0	0	0	0	0	0	0	0	56° 45'	-0.2	-0.1	0	0	0	-0.1	-0.1	-0.1	0		
0	0	0	0	0	0.1	0	0	0	56° 30'	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	0		
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	0	0	-0.1	-0.2	-0.1	0	0	0		
0	0	0	0	0	0	0	0.1	0.1	56° 0'	0	0.1	0	-0.1	-0.2	-0.1	0	-0.1	-0.1		
0	0	0	0	0	0	0.1	0.1	0.1	55° 45'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1		
0	0	0	0.1	0.1	0.1	0.1	0.1	0	55° 30'	0	0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	0		
0	0	0	0.1	0.1	0.1	0.1	0	-0.2	55° 15'	0.1	-0.1	-0.2	-0.2	-0.1	-0.2	-0.2	0	0.3		
0.1	0.1	0.1	0.1	0.1	0.1	0	-0.1	-0.3	55° 0'	0.1	-0.1	-0.2	-0.2	-0.2	-0.2	0	0.3	0.5		
0.1	0.1	0.1	0	0	-0.1	-0.2	-0.2	-0.2	54° 45'	0	-0.1	-0.2	-0.2	-0.1	-0.1	0.1	0.4	0.5		
0	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	0	54° 30'	0	-0.1	-0.1	-0.1	0	0	0.1	0.3	0.3		
-0.1	0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	0.1	54° 15'	-0.1	-0.1	0	0	0.1	0.1	0.1	0.1	0.1		
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	54° 0'	-0.1	0	0	0	0.1	0.1	0	-0.1	-0.1		
-0.1	-0.1	-0.1	0	0	0.1	0.1	0	0	53° 45'	-0.1	0	0	0	0	0.1	0	0	0		
-0.1	-0.1	-0.1	-0.1	0	0	0.1	0.1	0	53° 30'	-0.1	0	-0.1	-0.1	0	0	0	0.1	0		
-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	0	0.1	0.1	53° 15'	0	0	-0.1	-0.2	-0.1	0	0	0.1	0.1		
0.1	-0.1	-0.3	-0.3	-0.3	-0.2	-0.1	0	0	53° 0'	0.2	0.2	0	-0.2	-0.2	-0.2	-0.2	0	0.1		
0.3	0.2	0	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	52° 45'	0.5	0.5	0.2	-0.1	-0.3	-0.3	-0.3	-0.1	0		
0.5	0.5	0.3	0.2	0.1	0	-0.2	-0.3	-0.2	52° 30'	0.6	0.8	0.5	0	-0.3	-0.3	-0.1	-0.1	-0.1		
0.3	0.5	0.6	0.6	0.4	0.3	0	-0.1	-0.1	52° 15'	0.3	0.7	0.7	0.2	-0.1	0	0.2	0	-0.2		
0	0.3	0.6	0.7	0.6	0.5	0.3	0.2	0.2	52° 0'	-0.1	0.3	0.5	0.3	0.1	0.3	0.5	0.1	-0.3		
-0.3	0	0.2	0.4	0.5	0.5	0.5	0.5	0.6	51° 45'	-0.4	-0.1	0.1	0.1	0.2	0.5	0.5	0.1	-0.3		
-0.3	-0.3	-0.1	0	0.2	0.3	0.4	0.6	0.6	51° 30'	-0.4	-0.3	-0.2	-0.1	0	0.3	0.4	-0.1	-0.3		
-0.2	-0.3	-0.3	-0.3	-0.2	0	0.1	0.3	0.3	51° 15'	-0.3	-0.3	-0.3	-0.2	-0.1	0.1	0.1	-0.2	-0.3		
-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	-0.1	-0.1	51° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.3	-0.3		
0	0	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.4	50° 45'	-0.1	0	0	-0.1	-0.2	-0.1	-0.2	-0.3	-0.3		
-0.1	0	0	-0.1	-0.1	-0.2	-0.2	-0.3	-0.4	50° 30'	-0.2	-0.1	0	0	-0.1	-0.1	-0.1	-0.2	-0.3		
0	0	0	0	0	-0.1	-0.1	-0.2	-0.2	50° 15'	-0.1	-0.1	0	0	0	0	-0.1	-0.1	-0.1		
0	0	0	0	0	0	0	0	-0.1	50° 0'	-0.1	-0.1	0	0	0	0	0	0	-0.1		

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N
Correction to Latitude
Longitude 176 to 180 °E
Correction to Longitude

Correction to Latitude										Correction to Longitude									
176°	176°	177°	177°	178°	178°	179°	179°	180°	Longitude	176°	176°	177°	177°	178°	178°	179°	179°	180°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
-0.1	0	0	0	0	0	0	0	0	60° 0'	0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	
-0.1	-0.1	0	0	0	0	0	0	0	59° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0.1	
-0.1	0	0	0	0	0	0	0	0	59° 30'	0.1	0.1	0.1	0	0	0	0	0	0	
-0.1	0	0	0	0	0	0	0	0	59° 15'	0	0.1	0.1	0	0	0	0.1	0	0	
-0.1	0	0	0	0	0	0	0	0	59° 0'	0	0	0	0	0	0	0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	58° 45'	-0.1	-0.1	0	0	0	0.1	0.1	0.1	-0.1	
0	0	0	0	0	0	0	0	0	58° 30'	-0.1	-0.1	0	0.1	0	0	0.1	0.1	-0.1	
0	0	0	0	0	0	0	0	0	58° 15'	-0.1	-0.1	0	0.1	0	0	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	58° 0'	0	-0.1	0	0.1	0	0	0	0.1	0	
0	0	0	0	0	0	0	0	0	57° 45'	0	0	0	0	0	0	0	0.1	0	
0	0	0	0	0	0	0	0	0	57° 30'	0	0	0	0	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	57° 15'	0	0	0	0	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	57° 0'	0	0	0	0	0	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	56° 45'	0	0	0	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	56° 30'	0	0	0	0	0	0.1	0	0	0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	56° 15'	0	0	0	0	0	0.1	0.1	0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	56° 0'	-0.1	0	0	0	0	0.1	0.1	0.1	0	
0.1	0.1	0	0	0	0.1	0.1	0.1	0.1	55° 45'	-0.1	0	0	0	0	0.1	0.1	0.2	0.1	
0	-0.1	-0.2	-0.2	-0.1	-0.1	0	0.1	0.1	55° 30'	0	0.1	0.1	0	0	-0.1	0	0.2	0.2	
-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	0	0.1	55° 15'	0.3	0.2	0.1	0	-0.1	-0.2	-0.1	0	0.2	
-0.3	-0.3	-0.3	-0.2	-0.2	-0.3	-0.3	-0.2	0	55° 0'	0.5	0.3	0	-0.1	-0.1	-0.2	-0.3	-0.3	0	
-0.2	-0.1	0	0	0	-0.1	-0.3	-0.3	-0.2	54° 45'	0.5	0.3	-0.1	-0.1	0	0	-0.3	-0.4	-0.3	
0	0.1	0.2	0.2	0.1	0.1	-0.1	-0.2	-0.2	54° 30'	0.3	0.1	-0.1	-0.1	0.1	0.2	-0.1	-0.4	-0.5	
0.1	0.2	0.2	0.1	0.2	0.2	0.1	-0.1	-0.2	54° 15'	0.1	0	-0.1	0	0.1	0.3	0.2	-0.2	-0.5	
0	0.1	0	0	0	0.1	0.2	0	-0.1	54° 0'	-0.1	-0.1	-0.1	0	0	0.2	0.4	0.1	-0.4	
0	0	0	0	0	0	0.1	0.1	0	53° 45'	0	-0.1	0	0	-0.1	0.1	0.4	0.3	-0.2	
0	0	0	0	0	0	0.1	0.1	0	53° 30'	0	0	-0.1	0	-0.1	0	0.2	0.4	-0.1	
0.1	0	0.1	0.1	0	0	0	0	0	53° 15'	0.1	-0.1	-0.1	0	0	0	0.2	0.3	0	
0	0	0	0	0	0	-0.1	-0.1	0	53° 0'	0.1	0	-0.1	0	0.1	0	0.1	0.3	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	52° 45'	0	-0.1	-0.1	0	0.1	0.1	0.2	0.2	0	
-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	52° 30'	-0.1	-0.1	-0.1	0	0.1	0.1	0.2	0.1	-0.2	
-0.1	0	-0.1	-0.1	-0.2	-0.1	-0.1	0	0.1	52° 15'	-0.2	-0.2	0	0.1	0	0	0.1	0	-0.2	
0.2	0.3	0.2	0.1	0	0	0	0.1	0.1	52° 0'	-0.3	-0.2	0.1	0.2	0	0	0	-0.1	-0.2	
0.6	0.5	0.4	0.4	0.3	0.2	0.1	0.2	0.2	51° 45'	-0.3	-0.1	0.3	0.3	0.1	0.1	-0.1	-0.2	-0.2	
0.6	0.6	0.6	0.6	0.5	0.4	0.3	0.3	0.3	51° 30'	-0.3	0	0.4	0.4	0.3	0.2	-0.1	-0.3	-0.1	
0.3	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.5	51° 15'	-0.3	0	0.3	0.3	0.4	0.3	0	-0.3	-0.1	
-0.1	0	0.1	0.3	0.4	0.6	0.6	0.6	0.6	51° 0'	-0.3	-0.1	0.1	0.1	0.3	0.3	0	-0.2	-0.1	
-0.4	-0.3	-0.2	-0.1	0.1	0.3	0.4	0.4	0.3	50° 45'	-0.3	-0.2	-0.1	-0.1	0	0.1	-0.1	-0.2	0	
-0.4	-0.4	-0.4	-0.3	-0.3	-0.1	-0.1	-0.1	-0.1	50° 30'	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	0	
-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	50° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	0	
-0.1	-0.2	-0.2	-0.3	-0.4	-0.4	-0.5	-0.5	-0.5	50° 0'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	0	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 180 to 176 °W									
Correction to Latitude										Correction to Longitude									
180°	179°	179°	178°	178°	177°	177°	176°	176°	Longitude	180°	179°	179°	178°	178°	177°	177°	176°	176°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0.1	0	0	0	0	0	0	0	60° 0'	0.1	0.3	0.3	0.2	0.1	0	0	0.1	0.1	
0	0	0.1	0	0	0	0	0	0	59° 45'	0.1	0.3	0.4	0.3	0.1	0	0	0.1	0.1	
0	0	0.1	0	0	0	-0.1	-0.1	0	59° 30'	0	0.2	0.4	0.4	0.2	0	0	0	0.1	
0	0	0.1	0.1	0	0	-0.1	-0.1	-0.1	59° 15'	0	0.1	0.3	0.4	0.3	0.1	0	0	0.1	
0	0	0	0.1	0.1	0	0	0	0	59° 0'	-0.1	0	0.3	0.5	0.4	0.2	0	0	0	
0	0	0	0.1	0.1	0.1	0.1	0.1	0	58° 45'	-0.1	-0.1	0.1	0.4	0.4	0.2	0.1	0.1	0.1	
0	0	0	0.1	0.1	0.2	0.2	0.1	0.1	58° 30'	-0.1	-0.1	0	0.3	0.3	0.2	0.1	0.2	0.2	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	58° 15'	0	-0.1	0	0.1	0.2	0.1	0.2	0.3	0.2	
0	0	0	0	0	0	0	0	0.1	58° 0'	0	-0.1	-0.1	0	0	0	0.2	0.3	0.2	
0	0	0	-0.1	-0.1	-0.1	0	0	0	57° 45'	0	-0.1	0	0	0	0	0.1	0.2	0.1	
0	0	0	0	0	-0.1	0	0	0	57° 30'	0	0	0	0.1	0	0	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	57° 15'	0	0	0	0	0	0	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	57° 0'	0	0	0	0	0	0	0.1	0	0	
0	0	0	0	0	0	0	0	0	56° 45'	0.1	0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	56° 30'	0.1	0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	56° 15'	0	0	0.1	0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	56° 0'	0	0	0.1	0.1	0.1	0	0	0	0	
0.1	0	0	0	0	0	0	0	0	55° 45'	0.1	0	0	0.1	0.1	0	0	0	0	
0.1	0.1	0	0	0	0	0	0	0	55° 30'	0.2	0.1	0	0.1	0.1	0.1	0	0	0.1	
0.1	0.1	0.1	0	0	0	0	0	0	55° 15'	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0	0.1	
0	0.1	0.1	0	0	0	0	0	0	55° 0'	0	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	
-0.2	0	0.1	0	0	0	0	0	0	54° 45'	-0.3	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0	
-0.2	-0.1	0	0	0	0	0	0	0	54° 30'	-0.5	-0.2	0.2	0.2	0.1	0.1	0.1	0.1	0	
-0.2	-0.1	0	0.1	0	0	0	0	0	54° 15'	-0.5	-0.4	0.1	0.3	0.1	0	0.1	0.1	0	
-0.1	-0.1	0	0	0	0	0	0	0	54° 0'	-0.4	-0.5	-0.1	0.2	0.2	0	0.1	0.1	0.1	
0	-0.1	-0.1	0	0	0	0	0	0	53° 45'	-0.2	-0.6	-0.3	0.2	0.2	0.1	0	0.1	0.1	
0	-0.1	-0.1	0	0	0	0	0	0	53° 30'	-0.1	-0.5	-0.3	0.1	0.2	0.1	0	0.1	0.1	
0	0	-0.1	0	0	0	0	0	0	53° 15'	0	-0.4	-0.3	0.1	0.2	0	0	0.1	0	
0	0	0	0	0	0	0.1	0	0	53° 0'	0.1	-0.3	-0.3	0.1	0.2	0	0	0.1	0	
0	0	0	0	0	0.1	0.1	0	0	52° 45'	0	-0.4	-0.3	0	0.1	0	0	0.1	0.1	
0	0.1	0	0	0	0	-0.1	-0.1	-0.1	52° 30'	-0.2	-0.4	-0.3	0.1	0.1	0	0.1	0.2	0.2	
0.1	0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	52° 15'	-0.2	-0.3	-0.1	0.1	0.1	0	0.1	0.2	0.2	
0.1	0	-0.1	-0.2	-0.2	-0.1	-0.2	-0.1	0	52° 0'	-0.2	-0.1	0	0.1	0.1	0.1	0.1	0.2	0.1	
0.2	0.1	-0.1	0	0.1	0.1	0.2	0.3	0.4	51° 45'	-0.2	0.1	0.2	0.1	0	0.1	0.1	0	-0.1	
0.3	0.3	0.2	0.3	0.4	0.5	0.5	0.6	0.7	51° 30'	-0.1	0.2	0.2	-0.1	-0.1	0	0	-0.1	-0.2	
0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.6	51° 15'	-0.1	0.3	0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	
0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.4	0.3	51° 0'	-0.1	0.2	0.1	-0.2	-0.1	0	-0.1	-0.1	-0.1	
0.3	0.3	0.4	0.4	0.3	0.2	0.1	0	0	50° 45'	0	0.1	0	-0.1	0	0.1	0	0	0	
-0.1	-0.1	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	50° 30'	0	0.1	0	0	0.1	0.1	0.1	0.1	0.1	
-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	50° 15'	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	
-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	50° 0'	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 176 to 172 °W									
Correction to Latitude										Correction to Longitude									
176°	175°	175°	174°	174°	173°	173°	172°	172°	Longitude	176°	175°	175°	174°	174°	173°	173°	172°	172°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	0.1	0.1	0.2	0.1	0.1	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 45'	0.1	0.1	0.2	0.2	0.1	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 30'	0.1	0.1	0.1	0.2	0.1	0.1	0	0.1	0.1	
-0.1	-0.1	0	0	0	0	0	0	0	59° 15'	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	59° 0'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	58° 45'	0.1	0	0	0.1	0.1	0.1	0.1	0.1	0.1	
0.1	0.1	0.1	0.1	0	0	0	0	0	58° 30'	0.2	0	0	0.1	0.2	0.1	0.1	0.1	0.1	
0.1	0.1	0.1	0.1	0	0	0	0	0	58° 15'	0.2	0	0.1	0.2	0.3	0.2	0.1	0.1	0.1	
0.1	0.1	0.1	0.1	0	-0.1	-0.1	0	0	58° 0'	0.2	0	0.1	0.4	0.4	0.2	0	0	0.1	
0	0.1	0.1	0.1	0	0	0	0	0	57° 45'	0.1	-0.1	0.1	0.5	0.6	0.3	0	0	0.1	
0	0.1	0.1	0.1	0.1	0	0	-0.1	-0.1	57° 30'	0	-0.1	0.1	0.5	0.6	0.3	0	0	0.1	
0	0	0	0.1	0.1	0.1	0	-0.1	-0.1	57° 15'	0	-0.1	0.1	0.4	0.6	0.4	0.1	0	0.1	
0	0	0	0.1	0.1	0.2	0.1	0	0	57° 0'	0	-0.1	0.1	0.3	0.5	0.5	0.3	0.1	0	
0	0	0	0	0.1	0.2	0.2	0.2	0.1	56° 45'	0	0	0	0.2	0.4	0.5	0.4	0.2	0.1	
0	0	0	0	0.1	0.2	0.2	0.3	0.3	56° 30'	0	0	0	0.1	0.2	0.4	0.4	0.2	0.1	
0	0	0	0	0	0.1	0.2	0.2	0.3	56° 15'	0	0	0	0	0.1	0.2	0.2	0.2	0.2	
0	0	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	56° 0'	0	0	0	0	0.1	0.1	0	0.1	0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	55° 45'	0	0	0	0.1	0.1	0	0	0	0.1	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	55° 30'	0.1	0.1	0	0.1	0.1	0.1	0	0	0.1	
0	0	0	0	0	0	0	-0.1	-0.1	55° 15'	0.1	0.1	0	0	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	55° 0'	0.1	0.1	0.1	0	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	54° 45'	0	0.1	0.1	0	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	54° 30'	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 15'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 0'	0.1	0	0.1	0.1	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	53° 45'	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	53° 30'	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	
0	0	0.1	0	0	0	-0.1	-0.1	-0.1	53° 15'	0	0	0	0.1	0.1	0.1	0.2	0.1	0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 0'	0	0	0.1	0.1	0.1	0.2	0.2	0.2	0.1	
0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	52° 45'	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.1	
-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	52° 30'	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	
-0.2	-0.2	-0.1	0	0	0.1	0.2	0.2	0.3	52° 15'	0.2	0.2	0.2	0.1	0	0	0	0.1	0	
0	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	52° 0'	0.1	0.1	0	0	-0.1	-0.1	0	0	-0.1	
0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.6	51° 45'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	0	0	-0.1	
0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.5	51° 30'	-0.2	-0.2	-0.2	-0.2	-0.1	0	0	0	-0.1	
0.6	0.6	0.6	0.5	0.4	0.3	0.3	0.3	0.2	51° 15'	-0.2	-0.2	-0.2	-0.1	0	0	0.1	0.1	0.1	
0.3	0.2	0.2	0.1	0	-0.1	-0.1	-0.1	-0.2	51° 0'	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	0.2	0.2	
0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	50° 45'	0	0	0	0.1	0.2	0.1	0.1	0.2	0.3	
-0.3	-0.4	-0.4	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	50° 30'	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	
-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	50° 15'	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	
-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	50° 0'	0.1	0.1	0.2	0.2	0.1	0	0	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 172 to 168 °W									
Correction to Latitude										Correction to Longitude									
172°	171°	171°	170°	170°	169°	169°	168°	168°	Longitude	172°	171°	171°	170°	170°	169°	169°	168°	168°	Longitude
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude
0	0	0	-0.1	-0.1	-0.1	0	0	0	60° 0'	0.1	0.1	0	0	0.1	0.1	0.1	0.1	0.1	60° 0'
0	0	0	0	-0.1	-0.1	0	0	0	59° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	59° 45'
0	0	0	0	0	0	0	0	0	59° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0.1	59° 30'
0	0	0	0	0	0	0	0	0	59° 15'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 15'
0	0	0	0	0	0	0	0	0	59° 0'	0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 0'
0	0	0	0	0	0	0	0	0	58° 45'	0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	58° 45'
0	0	0	0	0	0	0	0	0	58° 30'	0.1	0.1	0	0.1	0	0	0.1	0.1	0.1	58° 30'
0	0	0	0	0	0	0	0	0	58° 15'	0.1	0.1	0	0.1	0	0	0	0.1	0.1	58° 15'
0	0	0	0	0	0	0	0	0	58° 0'	0.1	0.1	0	0	0.1	0	0	0.1	0.1	58° 0'
0	0	0	0	0	0	0	0	0	57° 45'	0.1	0.1	0	0	0.1	0	0	0	0.1	57° 45'
-0.1	0	0	0	0	0	0	0	0	57° 30'	0.1	0.1	0	0	0.1	0.1	0	0	0.1	57° 30'
-0.1	-0.1	0	0	0	0	0	0	0	57° 15'	0.1	0.1	0	0	0.1	0.1	0	0	0.1	57° 15'
0	0	0	0	-0.1	0	0	0	0	57° 0'	0	0	0	0	0.1	0	0	0	0.1	57° 0'
0.1	0.1	0.1	0	0	0	0	0	0	56° 45'	0.1	0	0.1	0.1	0.1	0	0	0	0.1	56° 45'
0.3	0.2	0.1	0.1	0.1	0	0	0	0	56° 30'	0.1	0.2	0.2	0.2	0.1	0	0	0	0	56° 30'
0.3	0.2	0.2	0.2	0.2	0.1	0	0	0	56° 15'	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0	0	56° 15'
0.1	0.1	0.1	0.2	0.2	0.2	0.1	0	0	56° 0'	0.2	0.3	0.3	0.2	0.1	0.2	0.2	0.1	0	56° 0'
0	0	0.1	0.1	0.1	0.1	0.1	0	0	55° 45'	0.1	0.2	0.2	0.1	0.2	0.3	0.3	0.2	0.1	55° 45'
-0.1	0	0	0	0	0	0	0.1	0	55° 30'	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.1	55° 30'
-0.1	0	-0.1	-0.1	-0.1	-0.1	0	0.1	0	55° 15'	0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	55° 15'
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	55° 0'	0	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.2	55° 0'
0	0	0	-0.1	0	0	0	0	0	54° 45'	0	0.1	0.2	0.2	0.1	0	0.1	0.2	0.2	54° 45'
0	0	0	0	0	0	0	0	0	54° 30'	0	0.1	0.2	0.2	0.1	0	0.1	0.1	0.2	54° 30'
0	0	0	0	0	0	0	0	0	54° 15'	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	54° 15'
0	0	0	0	0	0	0	-0.1	-0.1	54° 0'	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	54° 0'
0	0	0	0	0	-0.1	-0.1	-0.1	-0.2	53° 45'	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	53° 45'
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 30'	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.2	53° 30'
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	53° 15'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	53° 15'
-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0.3	0.4	53° 0'	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0	-0.2	53° 0'
-0.1	-0.1	-0.1	0	0.1	0.2	0.4	0.5	0.6	52° 45'	0.1	0.1	0.2	0.2	0.1	-0.1	-0.2	-0.3	-0.3	52° 45'
0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	52° 30'	0.1	0	0.1	0	-0.1	-0.3	-0.4	-0.4	-0.3	52° 30'
0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.5	0.4	52° 15'	0	-0.1	-0.1	-0.1	-0.2	-0.4	-0.4	-0.3	-0.1	52° 15'
0.5	0.6	0.7	0.7	0.6	0.6	0.4	0.2	0.1	52° 0'	-0.1	-0.2	-0.2	-0.1	-0.2	-0.3	-0.3	-0.1	0.1	52° 0'
0.6	0.6	0.6	0.5	0.4	0.3	0.1	-0.1	-0.2	51° 45'	-0.1	-0.3	-0.2	-0.1	-0.1	-0.1	0	0.2	0.3	51° 45'
0.5	0.4	0.3	0.2	0.1	-0.1	-0.2	-0.3	-0.3	51° 30'	-0.1	-0.2	-0.1	0.1	0.1	0.1	0.2	0.3	0.3	51° 30'
0.2	0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	51° 15'	0.1	0	0.1	0.2	0.2	0.3	0.3	0.3	0.3	51° 15'
-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	51° 0'	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	51° 0'
-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.1	50° 45'	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	50° 45'
-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	0	50° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	50° 30'
-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	0	50° 15'	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 15'
-0.2	-0.1	-0.1	-0.1	-0.1	0	0	0	0	50° 0'	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	50° 0'

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 160 to 156 °W									
Correction to Latitude										Correction to Longitude									
160°	159°	159°	158°	158°	157°	157°	156°	156°	Longitude	160°	159°	159°	158°	158°	157°	157°	156°	156°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	0	-0.1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	59° 45'	0	-0.1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	59° 30'	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	59° 15'	0	0	0	0	0	0	0	0.1	0	0
0	0	0	0	0	0	0	0	0	59° 0'	0	0	0	0	0	0	0	0.1	0	0
0	0	0	0	0	0	0	0	0	58° 45'	0	0	0	0	0	0	0	0.1	0	0
0	0	0	0	0	0	0	0	0	58° 30'	0	-0.1	0	0	0	0	0	0.1	0	0
0	0	0	0	0	0	0	0	0	58° 15'	0	0	0	0	0	0	0	0.1	0.1	0
0	0	0	0	0	0	0	0	0.1	58° 0'	0	0	0	0	0	0	0	0.1	0.1	0
0	0	0	0	0	0	0	0	0.1	57° 45'	0	0	0	0	0	0	0	0	0	-0.1
0	0	0.1	0	0	0	0	0	0.1	57° 30'	0	0	0	0	0.1	0.1	0	0	-0.1	-0.2
0	0	0	0	0	0	0	0.1	0.1	57° 15'	-0.1	0	0	0.1	0.1	0.1	-0.1	-0.3	-0.2	
0	0	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	57° 0'	0	0	0.1	0.1	0.1	0	-0.2	-0.3	-0.3	-0.3
0	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	56° 45'	0.1	0.1	0.1	0.1	0	-0.2	-0.3	-0.4	-0.2	
-0.1	-0.1	-0.1	0	0	0.1	0.1	0	0	56° 30'	0.1	0.2	0.1	0	-0.2	-0.3	-0.3	-0.3	-0.2	
-0.1	-0.1	0	0.1	0.1	0.1	0	0	-0.1	56° 15'	0.2	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	
-0.1	0	0.1	0.1	0.1	0	0	-0.1	-0.1	56° 0'	0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	
0	0	0.1	0.1	0	0	0	-0.1	-0.1	55° 45'	0	-0.2	-0.3	-0.2	-0.1	0	0	0	0	0.1
0	0	0	0	0	0	0	0	0	55° 30'	-0.1	-0.2	-0.2	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0.1	0.1	55° 15'	-0.1	-0.2	-0.2	-0.1	0	-0.1	-0.1	0	-0.1	
0.1	0	0	0	0.1	0.1	0.2	0.2	0.2	55° 0'	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	54° 45'	-0.1	-0.1	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	
0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	54° 30'	0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0.4	0.4	0.3	0.3	0.2	0.1	0.1	0	-0.1	54° 15'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0.1
0.3	0.3	0.2	0.1	0	0	-0.1	-0.1	-0.1	54° 0'	0	0	0	0	0	0	0	0	0.1	0.1
0.1	0.1	0	0	-0.1	-0.1	-0.1	-0.2	-0.1	53° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 30'	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0
-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	0	0	53° 15'	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0	0
-0.2	-0.1	-0.1	-0.1	0	0	0	0	0	53° 0'	0.2	0.1	0.1	0	0	0	0	0	0	0
-0.1	-0.1	0	0	0	0	0	0	0	52° 45'	0.1	0.1	0	0	0	0	0	0	0	0
-0.1	0	0	0	0	0	0	0	0.1	52° 30'	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0.1	0.1	0.1	52° 15'	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0.1	0.1	0.1	0.1	52° 0'	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0.1	0.1	0.1	0.1	0.1	51° 45'	0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	0
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	51° 30'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 15'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 45'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 30'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 15'	0	0	0	0	0	0	-0.1	-0.1	0	0
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 0'	0	0	0	0	0	0	-0.1	-0.1	0	0

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 136 to 132 °W									
Correction to Latitude										Correction to Longitude									
136°	135°	135°	134°	134°	133°	133°	132°	132°	Longitude	136°	135°	135°	134°	134°	133°	133°	132°	132°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.1	
0.1	0	0	0	0	0	0	0	0	59° 45'	-0.2	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.1	
0.1	0.1	0	0	0	0	0	0	0	59° 30'	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	
0.1	0.1	0.1	0	0	0	0.1	0	0	59° 15'	-0.3	0	0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	59° 0'	-0.3	0	0.1	0	-0.2	-0.2	-0.2	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	58° 45'	-0.3	0	0.1	0	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0.1	0.1	0.1	0.1	0	0	0	58° 30'	-0.2	0	0	-0.1	-0.2	-0.1	0	0	-0.1	
0	0	0.1	0.1	0.1	0	0	0	0	58° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0	-0.1	
0	0	0	0.1	0	0	0	0	0.1	58° 0'	0	-0.1	-0.2	-0.1	0	0.1	0.1	0	-0.1	
0.1	0	0	0	0	0	0.1	0.1	0.1	57° 45'	0.1	-0.1	-0.2	-0.1	0	0.1	0	-0.1	-0.1	
0.1	0.1	0	0	0	0	0.1	0.1	0	57° 30'	0.2	-0.1	-0.2	-0.1	0	0.1	0	-0.1	-0.1	
0.1	0.1	0	0	0	0	0.1	0	0	57° 15'	0.3	0.1	-0.2	-0.1	0	0	0	0	0	
0.1	0.1	0	0	0	0	0.1	0	0	57° 0'	0.3	0.1	-0.1	-0.1	0	0	0	0	0.1	
0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	56° 45'	0.3	0.2	0	-0.1	-0.1	0	0	0.1	0.1	
0.2	0.2	0.1	0	0	0.1	0.1	0.1	0.1	56° 30'	0.3	0.3	0.1	-0.1	-0.1	-0.1	0	0	0.1	
0.2	0.2	0.1	0	0	0.1	0.1	0.1	0.1	56° 15'	0.2	0.3	0.2	0	-0.1	-0.1	-0.1	0	0.1	
0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	56° 0'	0.1	0.4	0.3	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	55° 45'	0	0.3	0.4	0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	55° 30'	-0.1	0.2	0.3	0.2	0	-0.1	-0.1	-0.1	-0.2	
0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	55° 15'	-0.2	0	0.3	0.3	0.1	0	-0.1	-0.1	-0.1	
0	0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	55° 0'	-0.3	-0.1	0.1	0.3	0.2	0	-0.1	-0.1	-0.1	
0	0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	54° 45'	-0.2	-0.2	0	0.2	0.3	0.1	-0.1	-0.1	-0.1	
0	0	0	0.1	0.2	0.1	0.1	0.1	0.1	54° 30'	-0.2	-0.3	-0.1	0.1	0.3	0.1	-0.1	-0.1	-0.1	
0	0	0	0.1	0.2	0.2	0.1	0.1	0.1	54° 15'	-0.1	-0.2	-0.2	0	0.2	0.2	0	-0.2	-0.1	
0.1	0	0	0.1	0.1	0.2	0.1	0	0	54° 0'	-0.1	-0.2	-0.3	-0.1	0.2	0.3	0.1	-0.2	-0.2	
0.1	0.1	0	0	0.1	0.2	0.1	0	0	53° 45'	-0.1	-0.1	-0.2	-0.2	0	0.3	0.2	-0.1	-0.2	
0.1	0.1	0	0	0.1	0.2	0.2	0.1	0	53° 30'	-0.1	-0.1	-0.2	-0.3	-0.1	0.2	0.3	0	-0.2	
0.1	0.1	0.1	0	0	0.1	0.2	0.2	0.1	53° 15'	-0.1	0	-0.1	-0.2	-0.2	0.1	0.3	0.2	-0.1	
0.1	0.1	0.1	0	0	0.1	0.2	0.2	0.2	53° 0'	-0.1	0	-0.1	-0.2	-0.2	0	0.2	0.2	0.1	
0.1	0.1	0.1	0.1	0	0	0.1	0.2	0.2	52° 45'	-0.1	0	0	-0.1	-0.2	-0.2	0	0.2	0.2	
0.1	0.1	0.1	0.1	0	0	0	0.1	0.2	52° 30'	-0.1	-0.1	0	0	-0.1	-0.2	-0.1	0.1	0.2	
0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	52° 15'	-0.1	-0.1	-0.1	0	0	-0.1	-0.2	0	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0.1	52° 0'	-0.1	0	-0.1	-0.1	0	-0.1	-0.2	-0.1	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	51° 45'	-0.1	0	0	-0.1	0	0	-0.1	-0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	51° 30'	-0.1	0	0	-0.1	-0.1	0	0	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	51° 15'	-0.1	0	0	0	-0.1	0	0	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 0'	-0.1	-0.1	0	0	0	0	0	0	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 45'	-0.1	-0.1	0	0	0	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 30'	-0.1	0	0	0	0	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 15'	-0.1	0	-0.1	0	0	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 0'	-0.1	0	-0.1	-0.1	0	0	0	0	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 132 to 128 °W									
Correction to Latitude										Correction to Longitude									
132°	131°	131°	130°	130°	129°	129°	128°	128°	Longitude	132°	131°	131°	130°	130°	129°	129°	128°	128°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 45'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 30'	-0.1	0	-0.1	-0.2	-0.3	-0.2	-0.1	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	59° 15'	-0.1	0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 0'	-0.1	0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	58° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	58° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	58° 15'	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0.1	0	0	0	0	0	0	0	0	58° 0'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0.1	0.1	0	0	0	0	0	0	0	57° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0.1	0.1	57° 30'	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	57° 15'	0	0	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	57° 0'	0.1	0	-0.2	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	
0.1	0	0	0	0	0.1	0.1	0.1	0.1	56° 45'	0.1	0	-0.2	-0.4	-0.3	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	56° 30'	0.1	0.1	-0.1	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	
0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	56° 15'	0.1	0.1	0	-0.2	-0.3	-0.2	-0.2	-0.1	-0.1	
0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	56° 0'	-0.1	0	0	-0.1	-0.2	-0.2	-0.2	-0.1	0	
0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	55° 45'	-0.2	-0.1	0	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	55° 30'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	55° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0.1	0	55° 0'	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	54° 45'	-0.1	-0.1	-0.2	-0.1	0	0	-0.1	-0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	54° 30'	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	0	0.1	
0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	0	54° 15'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	0	0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 0'	-0.2	-0.1	0	0	-0.1	-0.1	-0.1	0.1	0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	53° 45'	-0.2	-0.1	0	0	-0.1	-0.1	0	0.1	0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	53° 30'	-0.2	-0.2	-0.1	0	0	-0.1	-0.1	0	0.1	
0.1	0	0	0.1	0.1	0.1	0.1	0.1	0.1	53° 15'	-0.1	-0.2	-0.2	0	0	-0.1	-0.1	0	0	
0.2	0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	53° 0'	0.1	-0.2	-0.2	-0.1	0	-0.1	-0.1	-0.1	0	
0.2	0.1	0	0.1	0.1	0.1	0.1	0	0	52° 45'	0.2	0	-0.2	-0.1	0	0	-0.1	-0.1	0	
0.2	0.1	0.1	0.1	0.1	0.1	0.1	0	0	52° 30'	0.2	0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	52° 15'	0.2	0.1	-0.1	-0.1	0	0	0	0	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	52° 0'	0.1	0.1	0	-0.1	0	0	0	0	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 45'	0	0	0	0	0	0	0	0	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	51° 30'	-0.1	0	0	0	0	0	0	0	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	51° 15'	-0.1	-0.1	-0.1	0	0	0.1	0.1	0	0	
0.1	0	0	0.1	0.1	0.1	0.1	0.1	0	51° 0'	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	0	
0.1	0.1	0	0	0.1	0.1	0.2	0.1	0.1	50° 45'	0	-0.1	-0.1	-0.1	-0.1	0	0.2	0.2	0.1	
0.1	0.1	0.1	0	0	0.1	0.2	0.2	0.1	50° 30'	0	0	0	-0.1	-0.1	-0.1	0.1	0.2	0.2	
0.1	0.1	0.1	0	0	0	0.1	0.2	0.2	50° 15'	0	0	0	0	-0.1	-0.2	0	0.2	0.3	
0.1	0.1	0.1	0.1	0	0	0	0.1	0.2	50° 0'	0	0	0	0	-0.1	-0.2	-0.2	0.1	0.2	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 128 to 124 °W								
Correction to Latitude										Correction to Longitude								
128° 0'	127° 30'	127° 0'	126° 30'	126° 0'	125° 30'	125° 0'	124° 30'	124° 0'	Longitude	128° 0'	127° 30'	127° 0'	126° 30'	126° 0'	125° 30'	125° 0'	124° 30'	124° 0'
									Latitude									
0	0.1	0.1	0	0	0.1	0.1	0.1	0.1	60° 0'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.3	-0.4	-0.5	-0.4
0	0	0	0	0	0.1	0.1	0.1	0	59° 45'	-0.2	-0.2	-0.1	-0.1	-0.2	-0.3	-0.4	-0.4	-0.3
0	0	0	0	0	0.1	0.1	0	0	59° 30'	-0.3	-0.2	-0.1	-0.1	-0.2	-0.3	-0.4	-0.3	-0.2
0	0	0	0	0	0	0	0	0	59° 15'	-0.2	-0.2	-0.1	-0.2	-0.3	-0.4	-0.4	-0.3	-0.2
0	0	0	0	0	0	0	-0.1	-0.1	59° 0'	-0.2	-0.2	-0.1	-0.2	-0.3	-0.4	-0.3	-0.3	-0.2
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	58° 45'	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	58° 30'	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.4
0	0	0	0	0	0	0	0	0	58° 15'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4
0	0	0	0	0	0	0	0	0	58° 0'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4
0	0	0	0	0	0	0.1	0	0	57° 45'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.3
0.1	0.1	0	0	0	0	0	0	0	57° 30'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2
0.1	0.1	0.1	0	0	0	0	0	0	57° 15'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
0.1	0.1	0.1	0.1	0	0	0	0	0	57° 0'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1
0.1	0.1	0.1	0.1	0.1	0	0	0	0	56° 45'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1
0.1	0.1	0.1	0.1	0.1	0	0	0	0	56° 30'	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
0.1	0.1	0.1	0.1	0.1	0	0	0	0	56° 15'	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
0.1	0.1	0.1	0.1	0.1	0	0	0	0	56° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
0.1	0.1	0.1	0.1	0.1	0	0	0	0	55° 45'	-0.1	0	0	-0.1	-0.1	0	-0.1	-0.1	-0.1
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	55° 30'	-0.1	0	0	0	0	0	0	-0.1	-0.1
0	0	0	0	0	0.1	0.1	0.1	0	55° 15'	-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1
0	0	0	0	0	0.1	0.1	0.1	0	55° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	0	-0.1
0	0	0	0	0.1	0.1	0.1	0.1	0	54° 45'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0
0	0	0	0	0.1	0.1	0	0	0	54° 30'	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0
0	0	0	0	0	0	0	0	0	54° 15'	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0
0.1	0.1	0	0	0	0	0	0	0	54° 0'	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0
0.1	0.1	0.1	0	0	0	0	0	0	53° 45'	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0
0.1	0.1	0.1	0	0	0	0	0	0	53° 30'	0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	0
0.1	0.1	0.1	0	0	0	0	0	0	53° 15'	0	0.1	0.1	0	0	0	0	0	-0.1
0.1	0.1	0.1	0.1	0	0	0	0	0	53° 0'	0	0.1	0.1	0.1	0	0	0	0	-0.1
0	0.1	0.1	0.1	0	0	0	0	0	52° 45'	0	0	0.1	0.1	0.1	0	0	-0.1	-0.1
0	0	0.1	0.1	0.1	0	0	0	0	52° 30'	-0.1	0	0.1	0.2	0.1	0	-0.1	-0.1	-0.1
0	0	0	0.1	0.1	0	0	0	0	52° 15'	-0.1	0	0.1	0.2	0.2	0.1	-0.1	-0.1	-0.1
0.1	0	0	0	0.1	0	0	0	0	52° 0'	0	0	0.1	0.1	0.1	0.1	0	-0.1	-0.1
0.1	0	0	0	0	0.1	0	0	0	51° 45'	0	0.1	0.1	0	0.1	0.1	0	-0.1	-0.1
0	0.1	0.1	0	0.1	0.1	0.1	0.1	0	51° 30'	0	0.1	0.1	0	0.1	0.1	0	0	0
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 15'	0	0.1	0.1	0	0	0.1	0	0	0.1
0	0	0	0.1	0.1	0.1	0.2	0.2	0.1	51° 0'	0	0	0	0	0	0	0	0.1	0.1
0.1	0	0	0	0	0.1	0.1	0.1	0.1	50° 45'	0.1	0	0	0	0	0	0	0.1	0.1
0.1	0	0	0	0	0	0.1	0.1	0.1	50° 30'	0.2	0.1	0	0	-0.1	-0.1	-0.1	0.1	0.1
0.2	0.1	0.1	0	0	0	0	0	0.1	50° 15'	0.3	0.2	0.1	0	-0.1	-0.2	-0.1	0	0.1
0.2	0.2	0.2	0.1	0	0	0	0	0.1	50° 0'	0.2	0.3	0.2	0.1	0	-0.2	-0.2	0	0

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 124 to 120 °W									
Correction to Latitude										Correction to Longitude									
124° 0'	123° 30'	123° 0'	122° 30'	122° 0'	121° 30'	121° 0'	120° 30'	120° 0'	Longitude	124° 0'	123° 30'	123° 0'	122° 30'	122° 0'	121° 30'	121° 0'	120° 30'	120° 0'	
									Latitude										
0.1	0	0	0	0	0	0	0	0	60° 0'	-0.4	-0.2	-0.1	0	-0.1	-0.2	-0.2	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	59° 45'	-0.3	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 30'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	59° 15'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	59° 0'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	-0.2	
-0.1	0	0	0	0	0	0	0	0	58° 45'	-0.3	-0.3	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
-0.1	0	0	0	0	0	0	0	0	58° 30'	-0.4	-0.3	-0.2	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	-0.1	0	58° 15'	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	58° 0'	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	0	-0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	57° 45'	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	0	-0.1	
0	-0.1	-0.1	0	0	0	0	0	0	57° 30'	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 0'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 45'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 30'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	54° 45'	0	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	54° 30'	0	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 15'	0	-0.1	-0.1	-0.1	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	54° 0'	0	-0.1	-0.1	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	53° 45'	0	0	-0.1	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	53° 30'	0	-0.1	-0.1	0	0	0	-0.1	0	0	
0	0	0	0	0	0	0	0	0	53° 15'	-0.1	-0.1	-0.1	0	0	0	-0.1	0	0	
0	0	0	0	0	0	0	0	0	53° 0'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	52° 45'	-0.1	-0.1	-0.1	0	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	52° 30'	-0.1	-0.1	-0.1	-0.1	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	52° 15'	-0.1	0	-0.1	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	52° 0'	-0.1	0	-0.1	-0.1	0	0	-0.1	0	0	
0	0	0	0	0	0	0	0	0	51° 45'	-0.1	0	-0.1	-0.1	0	0	-0.1	0	0	
0	0	0	0	0	0	0	0	0	51° 30'	0	0	-0.1	-0.1	0	0	-0.1	0	0	
0.1	0.1	0	0	0	0	0	0	0	51° 15'	0.1	0	-0.1	-0.1	-0.1	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	51° 0'	0.1	0	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	50° 45'	0.1	0	0	0	0	0	0	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	50° 30'	0.1	0	0	0	0	0	0	0	-0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	50° 15'	0.1	0	0	0	0	0	0.1	0	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	50° 0'	0	0	0.1	0	0	0.1	0.1	0	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 120 to 116 °W									
Correction to Latitude										Correction to Longitude									
120°	119°	119°	118°	118°	117°	117°	116°	116°	Longitude	120°	119°	119°	118°	118°	117°	117°	116°	116°	Latitude
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude
0	0	0	0	0	0	0	-0.1	-0.1	60° 0'	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.2	
0	0	0	0	0	0	0	-0.1	-0.1	59° 45'	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	-0.1	-0.1	59° 30'	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 15'	-0.2	-0.1	-0.1	-0.2	-0.2	-0.1	0	0	-0.1	
0	0	0	0	0	0	0	0	0	59° 0'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0.1	0.1	58° 45'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	58° 30'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	58° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	58° 0'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	57° 45'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	-0.1	-0.1	0	0	0	0	0	57° 30'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	57° 15'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	57° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 45'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 30'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 0'	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	-0.1	-0.1	55° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	-0.1	-0.1	55° 0'	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	
-0.1	0	0	0	0	0	0	0	0	54° 45'	-0.2	-0.1	-0.1	0	0	0	0	0	-0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	54° 30'	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	
0	-0.1	-0.1	-0.1	0	0	0	0	0	54° 15'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	-0.1	-0.1	0	0	0	0	0	54° 0'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	-0.1	0	0	0	0	0	53° 45'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	53° 30'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	-0.1	-0.1	-0.1	0	53° 15'	0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0.1	0	0	-0.1	-0.1	-0.1	-0.1	53° 0'	0	0	0	0	0	0	-0.1	-0.2	-0.2	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	52° 45'	-0.1	-0.1	0	0.1	0.1	0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	-0.1	-0.1	-0.1	52° 30'	-0.1	-0.1	0	0.1	0.2	0.1	0	-0.2	-0.3	
0	0	0	0	0.1	0.1	0	-0.1	-0.2	52° 15'	0	-0.1	0	0.1	0.1	0.1	0.1	-0.1	-0.2	
0	0	0	0	0.1	0.1	0.1	0	-0.1	52° 0'	0	0	0	0	0.1	0.1	0.2	0.1	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0	51° 45'	0	0	0	0	0	0.1	0.2	0.2	0	
0	0	0	0	0	0	0.1	0.1	0.1	51° 30'	0	0	0	0	0	0.1	0.2	0.2	0.1	
0	0.1	0.1	0	0	0	0.1	0.1	0.1	51° 15'	0	0	0	0	0	0	0.1	0.2	0.2	
0	0.1	0	0	0	0	0	0.1	0.1	51° 0'	-0.1	0	0	0	0	0	0	0.1	0.2	
0	0	0	0	0	0	0	0	0.1	50° 45'	-0.1	0	0	0	0	0	0	0.1	0.2	
0	0	0	0	0	0	0	0	0	50° 30'	-0.1	0	0	0	0	0.1	0.1	0	0.1	
0	0	0	0	0	0	0	0	0	50° 15'	-0.1	0	0	0	0	0.1	0.1	0	0.1	
0	0	0	0	0	0	0	0	0	50° 0'	-0.1	0	0	0	0	0	0.1	0	0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 116 to 112 °W									
Correction to Latitude										Correction to Longitude									
116°	115°	115°	114°	114°	113°	113°	112°	112°	Longitude	116°	115°	115°	114°	114°	113°	113°	112°	112°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	60° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	59° 45'	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	59° 30'	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	
0	0	-0.1	-0.1	0	0	0	0	0	59° 15'	-0.1	-0.2	-0.3	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 0'	-0.1	-0.1	-0.2	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0	0	0	-0.1	-0.1	58° 45'	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	
0	0.1	0.1	0	0	0	-0.1	-0.1	-0.1	58° 30'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	58° 15'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	58° 0'	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	57° 45'	-0.1	-0.2	-0.1	0	0	-0.1	-0.1	-0.2	-0.3	
0	0	0	0	-0.1	0	0	0	0	57° 30'	-0.2	-0.2	-0.1	0	0	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	57° 15'	-0.2	-0.2	-0.1	0	0	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	57° 0'	-0.1	-0.2	-0.1	0	0	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	56° 45'	-0.1	-0.2	-0.1	0	-0.1	-0.1	-0.2	-0.2	-0.1	
0	0	-0.1	0	0	0	0	0	-0.1	56° 30'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	
0	0	-0.1	-0.1	0	0	0	0	0	56° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	
0	0	-0.1	-0.1	0	0	0	0	0	56° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 45'	-0.1	0	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 30'	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	55° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	55° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	54° 45'	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	54° 30'	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	54° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	54° 0'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	53° 45'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	53° 30'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	53° 15'	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	0	
-0.1	0	0	0	-0.1	0	0	-0.1	0	53° 0'	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	52° 45'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	52° 30'	-0.3	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	0	
-0.2	-0.2	-0.1	0	0	0	0	-0.1	-0.1	52° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	
-0.1	-0.1	-0.1	0	0	0	0	-0.1	-0.1	52° 0'	-0.1	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	0	0	
0	-0.1	-0.1	0	0	0	-0.1	0	0	51° 45'	0	-0.3	-0.4	-0.3	-0.1	-0.1	-0.1	0	0	
0.1	0	-0.1	-0.1	0	-0.1	-0.1	0	0	51° 30'	0.1	-0.2	-0.4	-0.3	-0.1	-0.1	-0.1	0	0	
0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	51° 15'	0.2	-0.1	-0.3	-0.3	-0.1	0	-0.1	-0.1	0	
0.1	0.1	0	-0.1	-0.1	0	-0.1	0	0	51° 0'	0.2	0.1	-0.2	-0.3	-0.2	0	-0.1	-0.1	0	
0.1	0.1	0	-0.1	-0.1	0	0	0	0	50° 45'	0.2	0.2	-0.1	-0.3	-0.2	0	-0.1	-0.1	-0.1	
0	0.1	0	0	0	0	0	0	0	50° 30'	0.1	0.2	0	-0.2	-0.2	-0.1	-0.1	-0.1	0	
0	0.1	0.1	0	0	0	0	0	0	50° 15'	0.1	0.2	0	-0.2	-0.2	-0.1	-0.1	-0.1	0	
0	0	0.1	0	0	0	0	-0.1	-0.1	50° 0'	0.1	0.1	0	-0.1	-0.2	-0.1	0	-0.1	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 108 to 104 °W									
Correction to Latitude										Correction to Longitude									
108°	107°	107°	106°	106°	105°	105°	104°	104°	Longitude	108°	107°	107°	106°	106°	105°	105°	104°	104°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	59° 45'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	-0.1	59° 30'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	-0.1	59° 15'	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	-0.1	-0.1	0	0	0	0	-0.1	-0.1	59° 0'	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	0	0	0	0	0	-0.1	-0.1	58° 45'	0	0	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	
-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	0	58° 30'	0	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	58° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	58° 0'	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	57° 45'	-0.1	-0.2	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	57° 30'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	-0.1	-0.1	-0.1	0	0	0	57° 15'	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	-0.1	-0.1	0	0	0	0	57° 0'	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	-0.1	56° 45'	0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	-0.1	56° 30'	0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 15'	0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 0'	0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	55° 45'	0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	55° 30'	0	0	0	0	0	-0.1	-0.1	0	0	
-0.1	-0.1	-0.1	0	0	0	0	-0.1	0	55° 15'	0	0	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	55° 0'	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	54° 45'	-0.1	-0.1	0	0	-0.1	-0.1	0	-0.1	-0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	54° 30'	-0.1	-0.1	0	0	0	0	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	54° 15'	-0.1	-0.1	0	0	0	0	0	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	54° 0'	-0.1	-0.1	0	0	0	-0.1	0	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	53° 45'	-0.1	-0.1	0	0	0	-0.1	0	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	53° 30'	-0.1	-0.1	-0.1	0	0	-0.1	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 15'	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	0	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 0'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	0	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 45'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 30'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	-0.1	-0.1	52° 15'	-0.1	-0.1	0	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	52° 0'	-0.1	-0.1	0	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	51° 45'	-0.1	-0.1	0	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	-0.1	-0.1	51° 30'	-0.1	-0.1	0	0	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	-0.1	51° 15'	-0.1	-0.1	0	0	0	0	0	0	-0.1	
-0.1	-0.1	0	0	0	0	0	0	-0.1	51° 0'	-0.1	-0.1	0	0	0	0	0	0	0	
-0.1	-0.1	-0.1	0	0	0	0	0	-0.1	50° 45'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	50° 30'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	50° 15'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	50° 0'	-0.1	-0.1	-0.1	0	0	0	0	0	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 100 to 96 °W									
Correction to Latitude										Correction to Longitude									
100°	99°	99°	98°	98°	97°	97°	96°	96°	Longitude	100°	99°	99°	98°	98°	97°	97°	96°	96°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 45'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 30'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
-0.1	0	0	0	0	0	0	0	0	59° 15'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	59° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 45'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 30'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	58° 0'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	57° 45'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	57° 30'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.1	
-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	57° 15'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	57° 0'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	56° 45'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	56° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	56° 15'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	56° 0'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	55° 45'	0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	-0.1	-0.1	0	0	0	55° 30'	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	-0.1	0	0	0	0	55° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	55° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
0	0	-0.1	0	0	0	0	0	-0.1	54° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	-0.1	-0.1	54° 30'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	-0.1	-0.1	54° 15'	0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	54° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1	53° 45'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	53° 30'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	53° 15'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	-0.1	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	53° 0'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	-0.1	0	-0.1	52° 45'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	52° 30'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	52° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	52° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	0	51° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	51° 30'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 15'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 0'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 45'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 0'	0	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	0	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 92 to 88 °W									
Correction to Latitude										Correction to Longitude									
92°	91°	91°	90°	90°	89°	89°	88°	88°	Longitude	92°	91°	91°	90°	90°	89°	89°	88°	88°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	-0.1	
0	0	0	0	0	0	0	0	0	59° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0	59° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0.1	0.1	0.1	0.1	59° 15'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0.1	0.1	0.1	0	59° 0'	0	0	0	0	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 45'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 0'	0	0	0	0	0	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	57° 45'	0	0	0	0	0	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	57° 30'	0	0	0	0	0	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	57° 15'	0	0	0	0	0	0	-0.1	0	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	57° 0'	0	0	-0.1	0	0	0	-0.1	0	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	56° 45'	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	56° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	56° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
-0.1	0	0	0	0	0	0	-0.1	0	56° 0'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	0	0	0	
0	0	0	0	0	0	-0.1	-0.1	0	55° 45'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	0	0	0	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	55° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	55° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	0	0	55° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	
-0.1	-0.1	0	0	-0.1	-0.1	-0.1	0	0	54° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	54° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	54° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	54° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	53° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	53° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	52° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	52° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	52° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	51° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	51° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	51° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	50° 45'	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	
0	0	0	0	-0.1	-0.1	0	0	0	50° 30'	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	50° 15'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	50° 0'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 88 to 84 °W									
Correction to Latitude										Correction to Longitude									
88°	87°	87°	86°	86°	85°	85°	84°	84°	Longitude	88°	87°	87°	86°	86°	85°	85°	84°	84°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0.1	0.1	60° 0'	-0.1	-0.1	0	0	0.1	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0.1	59° 45'	-0.1	-0.1	0	0	0.1	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0.1	59° 30'	0	0	0	0	0.1	0.2	0.1	0.1	0.1	
0.1	0	0	0	0	0	0	0	0.1	59° 15'	0	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0.1	59° 0'	0	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0.1	58° 45'	0	0	0	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	58° 30'	0	0	0	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	58° 15'	0	0	0	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	58° 0'	0	0.1	0	0	0	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	57° 45'	0	0.1	0	0	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	57° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	57° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	57° 0'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	56° 45'	0	0	0	0	0	0	0	0	0	0.1
0	0	0	0	0	0	0	0	0	56° 30'	0	0	0	0	0	0	0	0	0	0.1
0	0	0	0	0	0	0	0	0	56° 15'	0	0	0	0	0	0	0	0	0	0.1
0	0	0	0	0	0	0	0	0	56° 0'	0	0	0	0	0	0	0	0	0	0.1
0	0	0	0	0	0	0	-0.1	-0.1	55° 45'	0	0	0	0	0	0	0	0	0	0.1
0	0	0	0	0	0	0	-0.1	-0.1	55° 30'	0	0	0	0	0	0	0	0.1	0.1	0.1
0	0	0	0	0	0	0	-0.1	-0.1	55° 15'	0	0	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	55° 0'	-0.1	0	0	-0.1	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 45'	-0.1	0	0	-0.1	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 30'	-0.1	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 15'	-0.1	-0.1	-0.1	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 0'	-0.1	-0.1	-0.1	0	0	0	0	0.1	0.1	
-0.1	0	0	0	0	0	0	0	0	53° 45'	-0.1	-0.1	-0.1	0	0	0	0	0.1	0.1	
-0.1	0	0	0	0	0	0	0	0	53° 30'	-0.1	-0.1	-0.1	-0.1	0	0	0	0.1	0	
0	0	0	0	0	0	0	0	0	53° 15'	-0.1	-0.1	-0.1	-0.1	0	0	0	0.1	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	53° 0'	-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 45'	-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 30'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 15'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 0'	-0.1	-0.1	-0.1	0	0	0	0	0	0	-0.1
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	51° 45'	-0.1	-0.1	0	0	0	0	0	0	-0.1	-0.1
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	51° 30'	-0.1	0	0	0	0	0	0	0	-0.1	-0.1
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	51° 15'	-0.1	0	0	0	0	0	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	51° 0'	-0.1	0	0	0	0	0	-0.1	-0.1	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	50° 45'	-0.1	-0.1	0	0	0	0	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	50° 30'	-0.1	-0.1	0	0	0	0	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	-0.1	50° 15'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	-0.1	-0.1	50° 0'	-0.1	-0.1	-0.1	0	0	0	0	0	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N									Longitude 84 to 80 °W									
Correction to Latitude									Correction to Longitude									
84°	83°	83°	82°	82°	81°	81°	80°	80°	Longitude	84°	83°	83°	82°	82°	81°	81°	80°	80°
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	60° 0'	0.1	0.1	0.1	0.1	0.1	0	0	0	0.1
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	59° 45'	0.1	0.1	0	0	0.1	0.1	0	0	0.1
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	59° 30'	0.1	0.1	0	0	0.1	0.1	0.1	0	0.1
0.1	0.1	0.1	0.1	0.1	0	0	0	0	59° 15'	0.1	0	0	0	0.1	0.1	0.1	0	0.1
0.1	0.1	0.1	0.1	0	0	0	0	0	59° 0'	0.1	0	0	0	0.2	0.2	0	-0.1	0.1
0.1	0.1	0.1	0	0	0	0	0	0	58° 45'	0	0	0	0.1	0.2	0.2	0	0	0.1
0	0	0	0	0	0	0	0	0	58° 30'	0	0	0	0.1	0.2	0.2	0.1	0	0.1
0	0	0	0	0	0	0	0	0	58° 15'	0	0	0	0.1	0.2	0.2	0.1	0	0.1
0	0	0	0	0	0	0	0	0	58° 0'	0	0	0	0.1	0.1	0.2	0.1	0.1	0.1
0	0	0	0	0	0	0	0	0	57° 45'	0	0	0	0	0.1	0.2	0.2	0.1	0.1
0	0	0	0	0	0	0	0	0	57° 30'	0	0	0	0.1	0.1	0.2	0.2	0.1	0
0	0	0	0	0	0	0	0	0	57° 15'	0	0	0	0.1	0.1	0.2	0.2	0.1	0
0	0	0	0	0	0	0	0	0	57° 0'	0	0	0	0.1	0.1	0.2	0.2	0.1	0
0	0	0	0	0	0	0	0	0	56° 45'	0.1	0	0	0	0.1	0.2	0.2	0.1	0
0	0	0	0	0	0	0	0	0	56° 30'	0.1	0	0	0	0.1	0.2	0.2	0.2	0.1
0	0	0	0	0	0	0	0	0	56° 15'	0.1	0.1	0	0	0.1	0.2	0.2	0.2	0.1
0	0	-0.1	-0.1	-0.1	0	0	0	0	56° 0'	0.1	0.1	0	0	0.1	0.1	0.2	0.1	0.1
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	55° 45'	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	0
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	55° 30'	0.1	0.1	0.1	0	0	0.1	0.1	0	0
-0.1	-0.1	-0.1	0	0	0	0	0	0	55° 15'	0.1	0.1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	55° 0'	0.1	0.1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	54° 45'	0.1	0.1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	54° 30'	0.1	0.1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	54° 15'	0.1	0.1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	54° 0'	0.1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	53° 45'	0.1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	53° 30'	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	53° 15'	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	53° 0'	0	0	0	0	0	0	0	0	0
-0.1	0	0	0	0	0	0	0	0	52° 45'	0	0	0	0	0	0	0	0	0
-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	52° 30'	0	0	0	0	0	0	0	0	0
-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	52° 15'	0	0	0	0	0	0	0	0	0
-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	0	52° 0'	-0.1	0	0	0	0	0	0	0	0
0	0	0	0	0	-0.1	-0.1	-0.1	0	51° 45'	-0.1	-0.1	0	0	0	0	0	0	0
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	51° 30'	-0.1	-0.1	0	0	0	0	0	0	0
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	51° 15'	-0.1	0	0	0	0	0	0	-0.1	0
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	51° 0'	0	0	0	0	0	0	-0.1	-0.1	0
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	50° 45'	0	0	0	0	0	0	-0.1	-0.1	-0.1
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	50° 30'	0	0	0	0.1	0.1	0	0	-0.1	-0.1
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	50° 15'	0	0	0	0.1	0.1	0	0	-0.1	-0.1
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	50° 0'	0	0	0	0	0	0	0	-0.1	-0.1

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 80 to 76 °W									
Correction to Latitude										Correction to Longitude									
80°	79°	79°	78°	78°	77°	77°	76°	76°	Longitude	80°	79°	79°	78°	78°	77°	77°	76°	76°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0.1	0.1	0	0	0	0	0	0	0	60° 0'	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.3	0.3	
0.1	0	0	0	0	0	0	0	0.1	59° 45'	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.3	0.2	
0	0	0	0	0	0	0	0.1	0.1	59° 30'	0.1	0.3	0.4	0.4	0.4	0.4	0.3	0.2	0.2	
0	0	0	0	0	0	0	0.1	0.1	59° 15'	0.1	0.3	0.4	0.4	0.3	0.3	0.3	0.2	0.2	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	59° 0'	0.1	0.3	0.4	0.4	0.3	0.3	0.3	0.2	0.2	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	58° 45'	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	58° 30'	0.1	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.2	
0	0	0	0	0	0.1	0.1	0.1	0.1	58° 15'	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	
0	0	0	0	0	0	0.1	0.1	0.1	58° 0'	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2	
0	0	0	0	0	0.1	0.1	0.1	0.1	57° 45'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	57° 30'	0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	57° 15'	0	0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	57° 0'	0	0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	56° 45'	0	0	0.1	0.2	0.2	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	56° 30'	0.1	0	0.1	0.2	0.2	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	56° 15'	0.1	0	0.1	0.1	0.2	0.1	0.1	0.2	0.2	
0	0	0.1	0.1	0.1	0.1	0	0	0	56° 0'	0.1	0	0	0.1	0.2	0.2	0.2	0.2	0.2	
0	0	0.1	0.1	0.1	0.1	0	0	0	55° 45'	0	0	0	0.1	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	55° 30'	0	0	0	0.1	0.2	0.2	0.3	0.3	0.2	
0	0	0	0	0	0	0	0	0	55° 15'	0	0	0	0.1	0.2	0.2	0.2	0.3	0.2	
0	0	0	-0.1	-0.1	-0.1	0	0	0	55° 0'	0	0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	
0	0	0	-0.1	0	0	0	0	0	54° 45'	0	0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 30'	0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 15'	0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 0'	0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	53° 45'	0	0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	53° 30'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	53° 15'	0	0	0.1	0.1	0.2	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	53° 0'	0	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	52° 45'	0	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	52° 30'	0	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	
-0.1	0	0	0	0	0	0	0	0	52° 15'	0	0	0.1	0.1	0.2	0.1	0.1	0.1	0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	52° 0'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	51° 45'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	51° 30'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	51° 15'	0	0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	
-0.1	0	0	0	0	0	0	0	0	51° 0'	0	0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	
-0.1	-0.1	0	0	0	0	0	0	0	50° 45'	-0.1	0	0	0.1	0.1	0.1	0.1	0.2	0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	50° 30'	-0.1	0	0	0.1	0.1	0.1	0.1	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	50° 15'	-0.1	-0.1	0	0	0	0.1	0.1	0.2	0.2	
0	0	-0.1	-0.1	0	0	0	0	0	50° 0'	-0.1	-0.1	0	0	0	0	0.1	0.1	0.2	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 72 to 68 °W									
Correction to Latitude										Correction to Longitude									
72° 0'	71° 30'	71° 0'	70° 30'	70° 0'	69° 30'	69° 0'	68° 30'	68° 0'	Longitude Latitude	72° 0'	71° 30'	71° 0'	70° 30'	70° 0'	69° 30'	69° 0'	68° 30'	68° 0'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	60° 0'	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	59° 45'	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 30'	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 15'	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	59° 0'	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	58° 45'	0.2	0.1	0	0	0.2	0.3	0.4	0.4	0.3	
0.1	0	0	0	0	0.1	0	0	0	58° 30'	0.2	0.1	0	0	0.1	0.3	0.4	0.4	0.3	
0	0	0	0	0	0	0	0	0	58° 15'	0.2	0.1	0	0	0.1	0.3	0.4	0.4	0.3	
0	0	0	0	0	0	0	0	0	58° 0'	0.2	0.2	0	0	0.1	0.3	0.4	0.4	0.3	
0	0	0	0	0	0	0	0	0	57° 45'	0.2	0.2	0.1	0	0.1	0.2	0.3	0.4	0.4	
0	0	0	0	0	0	0	0	0	57° 30'	0.2	0.2	0.1	0	0.1	0.2	0.3	0.4	0.4	
0.1	0.1	0	0	0	0	0	0	0	57° 15'	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.4	0.4	
0	0	0	0	0	0	0	0	0	57° 0'	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.4	
0	0	0	0	0	0	0	0	0.1	56° 45'	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.4	
0	0	0	0	0	0	0	0	0	56° 30'	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	56° 15'	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.3	
0	0	0	0	0	-0.1	-0.1	0	0	56° 0'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.3	
0	0	0	0	0	-0.1	-0.1	-0.1	0	55° 45'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	55° 30'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	-0.1	-0.1	55° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	55° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	53° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	53° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	53° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0.1	0	53° 0'	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	
0	0	0	0	0	0.1	0.1	0.1	0	52° 45'	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0.1	0	0	0	52° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	-0.1	52° 15'	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	
0	0.1	0	0	0	0	0	-0.1	-0.1	52° 0'	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	
0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1	51° 45'	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.2	
0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	51° 30'	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	
0	0	0	-0.1	-0.1	-0.1	0	0	0	51° 15'	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	51° 0'	0.1	0.2	0.3	0.3	0.2	0.1	0.1	0.2	0.1	
-0.1	-0.1	0	0	0	0	0	0	0	50° 45'	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	50° 30'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	50° 15'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0.1	0	0	0	0	50° 0'	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 68 to 64 °W									
Correction to Latitude										Correction to Longitude									
68°	67°	67°	66°	66°	65°	65°	64°	64°	Longitude	68°	67°	67°	66°	66°	65°	65°	64°	64°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	-0.1	0	0	0	0	0	0.1	0.1	60° 0'	0.3	0.3	0.4	0.5	0.6	0.6	0.5	0.4	0.4
0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	59° 45'	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.4	0.4
0.1	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	59° 30'	0.4	0.4	0.3	0.4	0.4	0.5	0.5	0.4	0.4
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 15'	0.4	0.4	0.3	0.3	0.4	0.5	0.5	0.4	0.4
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	59° 0'	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.3
0	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	58° 45'	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.3
0	0	0	0	0	0	0	0	0.1	0.1	58° 30'	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3
0	0	0	0	0	0	0	0	0	0.1	58° 15'	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3
0	0	0	0	0	0	0	0	0	0	58° 0'	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.2
0	0	0	0	0	0	0	0	0	0	57° 45'	0.4	0.3	0.3	0.4	0.4	0.5	0.4	0.3	0.2
0	0	0	0	0	0	0.1	0	0	0	57° 30'	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.2
0	0	0	0	0	0	0.1	0.1	0	0	57° 15'	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.2
0	0	0	0	0	0	0.1	0.1	0	0	57° 0'	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2
0.1	0.1	0	0	0	0	0	0.1	0.1	0.1	56° 45'	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2
0	0.1	0	0	0	0	0	0.1	0.1	0.1	56° 30'	0.3	0.4	0.4	0.4	0.3	0.2	0.3	0.3	0.2
0	0	0	0	0	0	0	0.1	0.1	0.1	56° 15'	0.3	0.4	0.4	0.4	0.3	0.2	0.2	0.3	0.2
0	0	0	0	0	0	0	0.1	0.1	0.1	56° 0'	0.3	0.4	0.4	0.4	0.3	0.2	0.2	0.2	0.2
0	0	0	0	0	0	0	0.1	0.1	0.1	55° 45'	0.2	0.4	0.4	0.4	0.3	0.2	0.2	0.2	0.2
-0.1	0	0	0	0	0	0	0.1	0.1	0.1	55° 30'	0.2	0.3	0.4	0.4	0.3	0.1	0.1	0.2	0.2
-0.1	0	0	0	0	0	0.1	0.1	0.1	0.1	55° 15'	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.2
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	55° 0'	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.2
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 45'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 30'	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1
0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	54° 15'	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1
0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	54° 0'	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0	0	0.1	0	0	0	0	0	0	0	53° 45'	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0	0	0	0	0	-0.1	0	0	-0.1	-0.1	53° 30'	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	53° 15'	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1
0	0	0	0	0	0	0	-0.1	-0.1	-0.1	53° 0'	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.1
0	0	0	0	0	0	0	0	0	0	52° 45'	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.2
0	-0.1	-0.1	-0.1	0	0	0	0	0	0	52° 30'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2
-0.1	-0.1	-0.1	0	0	0	0	0	0	0	52° 15'	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
-0.1	-0.1	-0.1	0	0	0	0	0	0	0	52° 0'	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
-0.1	0	0	0	0	0.1	0	0	0	0	51° 45'	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0	0	0	0	0	0	0	0	0	0	51° 30'	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0	0.1	0.1	0.1	0	0	0	0	0.1	0.1	51° 15'	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	51° 0'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 45'	0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	0
0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	50° 30'	0.1	0	0.1	0.1	0.1	0	0.1	0.1	0.1
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 15'	0.1	0	0	0.1	0	0	0.1	0.1	0.1
0	0.1	0.1	0.1	0.1	0	0.1	0.1	0	0	50° 0'	0.1	0	0	0.1	0	0	0.1	0.2	0.2

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 64 to 60 °W									
Correction to Latitude										Correction to Longitude									
64°	63°	63°	62°	62°	61°	61°	60°	60°	Longitude	64°	63°	63°	62°	62°	61°	61°	60°	60°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	60° 0'	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	59° 45'	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	59° 30'	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	59° 15'	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.2	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	59° 0'	0.3	0.3	0.3	0.4	0.5	0.5	0.4	0.3	0.1	
0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0	58° 45'	0.3	0.2	0.2	0.4	0.5	0.6	0.5	0.3	0.1	
0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0	58° 30'	0.3	0.2	0.1	0.3	0.5	0.6	0.6	0.5	0.2	
0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	58° 15'	0.3	0.1	0.1	0.2	0.3	0.6	0.7	0.6	0.3	
0	0	0	0.1	0.1	0.2	0.2	0.2	0.1	58° 0'	0.2	0.1	0.1	0.1	0.2	0.5	0.7	0.7	0.4	
0	0	0	0	0.1	0.1	0.2	0.2	0.1	57° 45'	0.2	0.1	0.1	0	0.1	0.3	0.6	0.7	0.5	
0	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	57° 30'	0.2	0.1	0.1	0.1	0.1	0.3	0.5	0.7	0.6	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	57° 15'	0.2	0.1	0.1	0.1	0.1	0.2	0.4	0.7	0.7	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	57° 0'	0.2	0	0	0.1	0.2	0.2	0.4	0.6	0.7	
0.1	0	0	0.1	0.1	0.1	0.1	0.2	0.2	56° 45'	0.2	0	0	0.1	0.1	0.2	0.3	0.5	0.7	
0.1	0	0	0	0	0.1	0.1	0.1	0.2	56° 30'	0.2	0.1	0	0.1	0.1	0.1	0.2	0.4	0.7	
0.1	0	0	0	0	0	0	0.1	0.1	56° 15'	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.6	
0.1	0	0	0	0	0	0	0	0.1	56° 0'	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.4	
0.1	0.1	0	0	0	0	0	0	0	55° 45'	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	55° 30'	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	55° 15'	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	55° 0'	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	54° 45'	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	54° 30'	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	
0.1	0.1	0.1	0	0	0	0.1	0	0	54° 15'	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	
0.1	0.1	0	0	0	0	0	0	0	54° 0'	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	53° 45'	0.1	0.1	0.2	0.2	0.1	0.1	0.3	0.4	0.4	
-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	53° 30'	0.1	0.1	0.2	0.2	0.1	0.2	0.3	0.4	0.4	
-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.1	53° 15'	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	53° 0'	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	52° 45'	0.2	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.2	
0	0	0	0	0	0	0	0	0	52° 30'	0.2	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.2	
0	0.1	0	0	0	0	0	0.1	0.1	52° 15'	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.2	
0	0.1	0.1	0	0	0.1	0.1	0.1	0.1	52° 0'	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	51° 45'	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	51° 30'	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 15'	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	51° 0'	0	0.1	0.2	0.1	0.1	0.2	0.3	0.2	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 45'	0	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	
0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50° 15'	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	50° 0'	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 60 to 56 °W									
Correction to Latitude										Correction to Longitude									
60°	59°	59°	58°	58°	57°	57°	56°	56°	Longitude	60°	59°	59°	58°	58°	57°	57°	56°	56°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0.1	0.1	0.1	0.1	0	0	0	0.1	60° 0'	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	
0	0	0.1	0.1	0.1	0	0	0	0	59° 45'	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
0	0	0.1	0.1	0.1	0	0	0	0	59° 30'	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	
0	0	0	0.1	0.1	0.1	0.1	0	0	59° 15'	0.1	0	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2
0	0	0	0	0.1	0.1	0.1	0.1	0	59° 0'	0.1	0	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3
0	0	0	0	0	0.1	0.1	0.1	0	58° 45'	0.1	0	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.3
0	0	0	0	0	0	0	0.1	0.1	58° 30'	0.2	0	0.1	0.2	0.2	0.2	0.3	0.4	0.3	
0.1	0	0	0	0	0	0	0	0	58° 15'	0.3	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	
0.1	0.1	0	0	0	0	0	0	0	58° 0'	0.4	0.1	0.1	0.2	0.3	0.2	0.2	0.3	0.3	
0.1	0.1	0	0	0	0	0	0	0	57° 45'	0.5	0.2	0.1	0.2	0.3	0.3	0.3	0.3	0.3	
0.1	0.1	0	0	0	0	0	0	0	57° 30'	0.6	0.3	0.1	0.1	0.2	0.3	0.3	0.3	0.3	
0.1	0.1	0	0	0	0	0	0	0	57° 15'	0.7	0.4	0.2	0.1	0.2	0.3	0.3	0.3	0.3	
0.2	0.1	0.1	0	0	0	0	0.1	0.1	57° 0'	0.7	0.6	0.3	0.1	0.2	0.2	0.3	0.3	0.3	
0.2	0.2	0.1	0	0	0	0	0.1	0.1	56° 45'	0.7	0.7	0.5	0.2	0.2	0.2	0.2	0.3	0.3	
0.2	0.2	0.1	0.1	0	0	0	0.1	0.1	56° 30'	0.7	0.7	0.6	0.4	0.2	0.1	0.1	0.2	0.3	
0.1	0.2	0.2	0.1	0.1	0	0.1	0.1	0.1	56° 15'	0.6	0.7	0.7	0.5	0.2	0.1	0	0.2	0.3	
0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	56° 0'	0.4	0.6	0.7	0.6	0.3	0.1	0	0.1	0.3	
0	0.1	0.2	0.2	0.2	0.1	0.1	0	0	55° 45'	0.3	0.5	0.6	0.5	0.4	0.2	0.1	0.2	0.3	
0.1	0.1	0.1	0.2	0.2	0.2	0.1	0	0	55° 30'	0.3	0.4	0.5	0.5	0.4	0.3	0.2	0.3	0.4	
0.1	0.1	0.1	0.2	0.2	0.2	0.1	0	0	55° 15'	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	55° 0'	0.3	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.5	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	54° 45'	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	
0	0	0	0	0	0	0	0.1	0.1	54° 30'	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	
0	0	0	-0.1	-0.1	0	0	0	0	54° 15'	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	54° 0'	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	53° 45'	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	
-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	0	53° 30'	0.4	0.5	0.4	0.3	0.2	0.3	0.3	0.2	0.2	
-0.1	-0.1	0	0	0	0	0	0	0	53° 15'	0.4	0.4	0.4	0.2	0.2	0.3	0.3	0.2	0.2	
-0.1	0	0	0	0	0	0.1	0.1	0	53° 0'	0.3	0.3	0.3	0.2	0.2	0.3	0.4	0.3	0.2	
0	0	0	0	0	0	0.1	0.1	0.1	52° 45'	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	
0	0	0.1	0	0	0	0	0.1	0.1	52° 30'	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	
0.1	0.1	0.1	0.1	0	0	0	0.1	0.1	52° 15'	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	52° 0'	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0	51° 45'	0.1	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0	51° 30'	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	51° 15'	0.1	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.5	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	51° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.5	
0.1	0.1	0.1	0.1	0	0	-0.1	-0.1	0	50° 45'	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	
0.1	0.1	0.1	0.1	0	-0.1	-0.1	-0.1	0	50° 30'	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.3	0.4	
0.1	0.1	0.1	0	0	-0.1	-0.1	-0.1	0	50° 15'	0.2	0.2	0.2	0.3	0.4	0.4	0.3	0.3	0.3	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	50° 0'	0.2	0.2	0.2	0.4	0.5	0.4	0.3	0.2	0.3	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 56 to 52 °W									
Correction to Latitude										Correction to Longitude									
56°	55°	55°	54°	54°	53°	53°	52°	52°	Longitude	56°	55°	55°	54°	54°	53°	53°	52°	52°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0.1	0.1	0.1	0.1	0	0	0	0.1	0	60° 0'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0	0.1	0.1	0.1	0.1	0	0	0	0.1	59° 45'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0	0.1	0.1	0.1	0.1	0	0	0	0	59° 30'	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3
0	0	0	0	0	0	0	0	0	59° 15'	0.2	0.2	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3
0	0	0	0	0	0	0	0	0	59° 0'	0.3	0.2	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3
0	0	0	0	0	0	0.1	0	0	58° 45'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.1	0	0	0	0	0	0	0	0	58° 30'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3
0	0	0	0	0	0	0	0	0	58° 15'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3
0	0	0	0	0	0	0	0	0.1	58° 0'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0	0	0	0	0	0	0	0	0.1	57° 45'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3
0	0	0	0	0	0	0	0	0	57° 30'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3
0	0	0	0	0	0	0	0	0	57° 15'	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
0.1	0	0	0	0	0.1	0	0	0	57° 0'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
0.1	0.1	0.1	0	0	0.1	0.1	0	0	56° 45'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.1	0.1	0.1	0.1	0	0	0	0	0	56° 30'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.1	0.1	0.1	0.1	0	0	0	0	0	56° 15'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.1	0	0	0	0	0.1	0.1	0	0	56° 0'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3
0	0	0	0	0	0	0.1	0.1	0	55° 45'	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0	-0.1	-0.1	-0.1	0	0	0	0	0	55° 30'	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3
0	0	-0.1	-0.1	-0.1	0	0	0	0	55° 15'	0.4	0.4	0.3	0.2	0.1	0.1	0.2	0.3	0.3	0.3
0.1	0	0	0	-0.1	0	0	0	0	55° 0'	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.2	0.3	0.3
0.1	0.1	0.1	0	0	0	0	0	0	54° 45'	0.5	0.5	0.4	0.3	0.2	0	0	0.2	0.4	0.4
0.1	0.1	0.1	0.1	0.1	0	0	0	0	54° 30'	0.5	0.5	0.4	0.3	0.2	0.1	0	0.2	0.4	0.4
0	0.1	0.1	0.1	0.1	0	0	0	0	54° 15'	0.5	0.4	0.4	0.3	0.2	0.1	0	0.2	0.3	0.3
0	0.1	0.1	0	0	0	0	-0.1	0	54° 0'	0.4	0.4	0.4	0.3	0.2	0.2	0.1	0.2	0.3	0.3
0	0	0	0	0	0	0	-0.1	-0.1	53° 45'	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2
0	0	0	0	0	0	0	0	0	53° 30'	0.2	0.4	0.4	0.3	0.2	0.2	0.3	0.2	0.2	0.2
0	0	0	0	0	0	0	0	0	53° 15'	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.2
0	0	0	0	0	0	0	0	0	53° 0'	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.2
0.1	0	0	0	0	0	0	0	0	52° 45'	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3
0.1	0.1	0.1	0	0	0	0	0	0	52° 30'	0.3	0.4	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3
0.1	0.1	0.1	0	0	0	0	0.1	0.1	52° 15'	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3
0.1	0	0	0	0	0	0	0.1	0.1	52° 0'	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.3
0	0	0	0	0	0	0	0	0	51° 45'	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.3
0	0	0	0	0	0	0	0	0	51° 30'	0.4	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.3
0	0	0	0	0	0	0	0	0	51° 15'	0.5	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3
0	0	0	0	0	0	0	0	0	51° 0'	0.5	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3
0	0	0	0	0	0	0	0	0	50° 45'	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3
0	0	0	0	0	0	0	0	0	50° 30'	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.2	0.3	0.3
0	0	0	0	0	0	0	0	0	50° 15'	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.4	0.4
-0.1	0	0	0	0	0.1	0	0	0	50° 0'	0.3	0.3	0.3	0.2	0.2	0.1	0.2	0.3	0.4	0.4

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 52 to 48 °W									
Correction to Latitude										Correction to Longitude									
52°	51°	51°	50°	50°	49°	49°	48°	48°	Longitude	52°	51°	51°	50°	50°	49°	49°	48°	48°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	
0.1	0.1	0.1	0.1	0	0	0	0	0	59° 45'	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.2	
0	0.1	0.1	0	0	0	0	0	0	59° 30'	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	59° 15'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	59° 0'	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
0	0	0	0	0	0	0	0	0	58° 45'	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0	0	0	0	0	0	0	0	0	58° 30'	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0	0	0	0	0	0.1	0	0	0	58° 15'	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.1	0.1	0	0	0	0	0	0	0	58° 0'	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.1	0.1	0	0	0	0	0	0	0	57° 45'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0	0	0	0	0	0	0	0	0	57° 30'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0	0	0	0	0	0	0	0	0	57° 15'	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0	0	0	0	0	0	0	0	0	57° 0'	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2
0	0	0	0	0	0	0	0	0	56° 45'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2
0	0	0	0	0	0	0	0	0	56° 30'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
0	0	0	0	0	0	0	0	0	56° 15'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2
0	0	0	0	0	0	0	0	0	56° 0'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0	0	0	0	0	0	0	0	0	55° 45'	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3
0	0	0	0	0	0	0	0	0	55° 30'	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3
0	0	0	0	0	0	0	0	0	55° 15'	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3
0	0	0	0	0	0	0	0	0	55° 0'	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3
0	0	0	0	0	0	0	0	0	54° 45'	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3
0	0	0	0	0	0	0	0	0	54° 30'	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3
0	0	0	0	0	0.1	0	0	0	54° 15'	0.3	0.4	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2
0	0	0	0	0	0.1	0.1	0	0	54° 0'	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.2
-0.1	0	0	0	0	0	0.1	0	0	53° 45'	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2
0	0	0	0	0	0	0	0.1	0	53° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2
0	0	0	0	0	0	0	0.1	0.1	53° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
0	0	0	0	0	0	0	0	0	53° 0'	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3
0	0	0	0	0	0	0	0	0	52° 45'	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
0	0	0	0	0	0.1	0.1	0	0.1	52° 30'	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
0.1	0.1	0	0	0	0	0.1	0.1	0.1	52° 15'	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2
0.1	0.1	0	0	0	0	0.1	0.1	0.1	52° 0'	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2
0	0	0	0	-0.1	0	0	0.1	0.1	51° 45'	0.3	0.3	0.3	0.2	0.1	0	0.1	0.2	0.2	0.2
0	0	0	0	-0.1	-0.1	0	0	0	51° 30'	0.3	0.3	0.3	0.2	0.1	0	0	0.1	0.2	0.2
0	0	0	0	0	-0.1	-0.1	0	0	51° 15'	0.3	0.3	0.3	0.3	0.1	0	0	0.1	0.1	0.1
0	0	0	0	0	0	0	0	0	51° 0'	0.3	0.3	0.3	0.3	0.2	0	0	0	0	0.1
0	0	0	0	0	0	0	0	0	50° 45'	0.3	0.3	0.3	0.3	0.2	0	0	0	0	0.1
0	0	-0.1	-0.1	0	0	0.1	0.1	0	50° 30'	0.3	0.3	0.3	0.2	0.1	0	0	0	0	0.1
0	0	-0.1	-0.1	0	0	0	0.1	0.1	50° 15'	0.4	0.4	0.3	0.2	0	-0.1	0	0	0	0.1
0	0	-0.1	-0.1	0	0	0	0	0	50° 0'	0.4	0.4	0.3	0.2	0	-0.1	-0.1	0	0	0.1

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 40 to 36 °W									
Correction to Latitude										Correction to Longitude									
40°	39°	39°	38°	38°	37°	37°	36°	36°	Longitude	40°	39°	39°	38°	38°	37°	37°	36°	36°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	59° 45'	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	59° 30'	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	59° 15'	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	59° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	58° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	58° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	58° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	58° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	57° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	57° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	57° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	57° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	56° 45'	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	56° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	56° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	56° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	55° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	55° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	55° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	55° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	54° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	53° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0.1	0.1	0.1	0	0	0	53° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	53° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	53° 0'	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	52° 45'	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0.1	52° 30'	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	52° 15'	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	52° 0'	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	51° 45'	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	
0.1	0.1	0	0	0	0	0	0	0	51° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	
0.1	0.1	0	0	0	0	0	0	0	51° 15'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	51° 0'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	50° 45'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	50° 30'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	50° 15'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	50° 0'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 32 to 28 °W									
Correction to Latitude										Correction to Longitude									
32°	31°	31°	30°	30°	29°	29°	28°	28°	Longitude	32°	31°	31°	30°	30°	29°	29°	28°	28°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	0.2	0.2	0.2	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	59° 45'	0.2	0.2	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	59° 30'	0.2	0.1	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	59° 15'	0.2	0.1	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	59° 0'	0.1	0.1	0.1	0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 45'	0.1	0.1	0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 30'	0.1	0.1	0.1	0	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 15'	0.1	0.1	0	0	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 0'	0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	57° 45'	0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	57° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0.1	0	0	57° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	57° 0'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	56° 45'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	56° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	56° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	56° 0'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	55° 45'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	55° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	55° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	55° 0'	0	0	0	0	0	0	0.1	0	0	
0	0	0	0	0	0	0	0	0	54° 45'	0	0	0	0	0	0	0.1	0	0	
0	0	0	0	0	0	0	0	0	54° 30'	0	0	0	0	0	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	54° 15'	0	0	0	0	0	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	54° 0'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	53° 45'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	53° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	53° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	53° 0'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	52° 45'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	-0.1	-0.1	-0.1	0	52° 30'	0.1	0.1	0	0	0	0	0	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 15'	0.1	0.1	0.1	0	0	0	0	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 0'	0.1	0.1	0.1	0	0	0.1	0	0	0	
0	0	0	0	-0.1	-0.1	-0.1	0	0	51° 45'	0.1	0.2	0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	51° 30'	0.1	0.2	0.1	0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	51° 15'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	51° 0'	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	50° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	50° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	50° 15'	0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	50° 0'	0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	0	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 24 to 20 °W									
Correction to Latitude										Correction to Longitude									
24°	23°	23°	22°	22°	21°	21°	20°	20°	Longitude	24°	23°	23°	22°	22°	21°	21°	20°	20°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0	0	0	0	60° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	59° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	59° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	59° 15'	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 0'	-0.1	-0.1	0	0	0	0	0	-0.1	0	
0	0	0	0	0	0	0	0	0	58° 45'	-0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	58° 30'	0	0	0	0	0	-0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	58° 15'	0	0	0	0	0	0	0	0	0.1	0.1
0	0	0	0	0	0	0	0	0	58° 0'	0	0	0	0	0	0	0	0	0.1	0
0	0	0	0	0	0	0	0	0	57° 45'	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	57° 30'	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	57° 15'	0	0	0	0	0	0	0	0	0	0
0	0	0	0	-0.1	0	0	0	0	57° 0'	0	0	0	0.1	0.1	0	0	0	0	-0.1
0	0	0	-0.1	-0.1	0	0	0	0	56° 45'	0	0	0.1	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1
0	0	-0.1	-0.1	-0.1	0	0	0	0	56° 30'	0	0	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1
0	0	-0.1	-0.1	0	0	0.1	0	0	56° 15'	0	0.1	0.1	0.1	-0.1	-0.2	-0.1	-0.1	0	
0	0	0	0	0.1	0.1	0.1	0	0	56° 0'	0	0.1	0.1	0	-0.1	-0.2	-0.1	0	0	
0	0	0.1	0.1	0.1	0.1	0.1	0	0	55° 45'	0	0	0.1	0	-0.2	-0.2	0	0.1	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	55° 30'	0	0	0	-0.1	-0.1	-0.1	0	0.2	0.1	
0.1	0.1	0.1	0.1	0	0	0	0	0	55° 15'	0	-0.1	0	0	-0.1	-0.1	0	0.2	0.2	
0	0	0	0	0	-0.1	0	0	0	55° 0'	-0.1	-0.1	0	0	0	-0.1	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 45'	-0.1	-0.1	0	0.1	0	-0.1	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 30'	-0.1	-0.1	0	0.1	0.1	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 15'	0	-0.1	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	54° 0'	0	-0.1	-0.1	0	0.1	0	0	0.1	0	
0	0	0	0	0	0	0	0	0	53° 45'	0	-0.1	-0.1	0	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	53° 30'	-0.1	-0.1	0	0	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	53° 15'	-0.1	-0.1	0	0	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	53° 0'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	52° 45'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	52° 30'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	52° 15'	0	-0.1	-0.1	0	0	0	0	0	0	-0.1
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	52° 0'	0	0	0	0	0	-0.1	0	0	-0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	51° 45'	0	0	0	0	0	-0.1	-0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	51° 30'	0	0	0	0	0	-0.1	-0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	51° 15'	0	0	0	0	0	-0.1	-0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	51° 0'	0	0	0	0	0	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	50° 45'	0	0	0	0	0	0	-0.1	0	0	
0	0	0	0	0	0	0	0	0	50° 30'	0	0	0	0	0	0	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	50° 15'	0	0	0	0	0	0	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	50° 0'	0	0	0	0	0	0	0	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 16 to 12 °W									
Correction to Latitude										Correction to Longitude									
16°	15°	15°	14°	14°	13°	13°	12°	12°	Longitude	16°	15°	15°	14°	14°	13°	13°	12°	12°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0	0	0	0	0	0.1	0.1	0.1	0.1	60° 0'	0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	59° 45'	0	0	0	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	59° 30'	-0.1	0	0	-0.1	-0.2	-0.3	-0.2	-0.1	-0.1	
0.1	0.1	0.1	0	0	0	0	0	0	59° 15'	-0.1	0	0	-0.1	-0.2	-0.3	-0.2	-0.1	-0.1	
0.1	0	0	0	0	0	0	0	0	59° 0'	-0.1	0	0	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	58° 45'	0	0	0	-0.1	-0.2	-0.2	-0.1	0	0	
0	-0.1	-0.1	0	0	0	0	0	0	58° 30'	0	0	0	-0.1	-0.2	-0.2	-0.1	0	0	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	58° 15'	0.1	0.1	0	-0.1	-0.2	-0.3	-0.2	0	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	58° 0'	0.1	0.1	0	0	-0.1	-0.3	-0.3	-0.1	0	
0	0	0	0	-0.1	-0.1	-0.1	0	0	57° 45'	0	0.1	0.1	0.1	0	-0.3	-0.4	-0.2	0	
0	0	0	0	0	0	0	0	0	57° 30'	0	0.1	0.1	0.1	0	-0.3	-0.4	-0.2	0	
0	0	0	0	0.1	0.1	0.1	0.1	0	57° 15'	0	0.1	0.1	0.1	-0.1	-0.3	-0.4	-0.2	0	
0	0	0	0	0.1	0.2	0.1	0.1	0.1	57° 0'	0	0.1	0.1	-0.1	-0.3	-0.3	-0.3	-0.1	0.1	
-0.1	-0.1	0	0.1	0.1	0.1	0.1	0	0	56° 45'	0	0.1	0	-0.2	-0.3	-0.3	-0.2	-0.1	0	
-0.1	-0.1	0	0.1	0.1	0	0	0	0	56° 30'	0	0	-0.1	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	
-0.1	0	0	0	0	0	-0.1	0	0	56° 15'	-0.1	-0.1	-0.2	-0.3	-0.3	-0.1	-0.1	-0.1	-0.1	
0	0.1	0.1	0	0	0	0	0	0	56° 0'	-0.1	-0.1	-0.2	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0	0	0	0	0	0	55° 45'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0	
0.1	0.1	0.1	0	0	0	0	0	0	55° 30'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0.1	0.1	0	0	0	0	0	0	0	55° 15'	-0.2	-0.1	0	0	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	55° 0'	-0.2	-0.1	0	0	-0.1	-0.1	0	0	0	
0	-0.1	0	0	0	0	0	0	0	54° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	-0.1	54° 30'	0	-0.1	-0.2	-0.1	-0.1	0	0	0	0	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	54° 15'	0	-0.1	-0.2	-0.1	0	0	0	0	0.1	
0	0	0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	54° 0'	-0.1	-0.1	-0.1	0	0.1	0	0	0	0.1	
0	0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	53° 45'	-0.1	0	0	0.1	0.1	0.1	0	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	53° 30'	-0.1	0	0.1	0.1	0.1	0	0	0	0	
0	0	-0.1	-0.1	-0.1	0	0	0	0	53° 15'	0	0.1	0.2	0.1	0	0	-0.1	0	0	
0	0	0	0	0	0	0	0	0	53° 0'	0	0.1	0.2	0.1	0	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	52° 45'	0.1	0.2	0.2	0.1	-0.1	-0.1	-0.1	0	0.1	
0	0	0	0	0	0	0	0	0	52° 30'	0.1	0.2	0.2	0.1	-0.1	-0.1	-0.1	0	0.1	
0	0	0	0	0	0	0	0	0	52° 15'	0.1	0.2	0.2	0	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	52° 0'	0.1	0.2	0.2	0	-0.1	-0.1	0	0	0	
0.1	0.1	0	0	0	0	0	0	0	51° 45'	0.1	0.2	0.3	0	-0.1	-0.1	0	-0.1	0	
0	0.1	0	0	0	0	0.1	0.1	0	51° 30'	0.1	0.2	0.3	0.1	-0.1	-0.1	0	0	0	
0	0	0.1	0.1	0	0.1	0.1	0.1	0	51° 15'	0	0.2	0.3	0.1	-0.2	-0.2	0	0	0	
0	0	0.1	0.1	0.1	0.1	0.1	0	0	51° 0'	0	0.2	0.3	0.1	-0.1	-0.2	0	0	0.1	
0	0	0.1	0.2	0.1	0.1	0	0	0	50° 45'	-0.1	0.1	0.2	0.1	-0.1	-0.1	0	0	0.1	
0	0	0.1	0.2	0.2	0.1	0	0	0	50° 30'	-0.1	0	0.1	0	0	0	0	0	0	
0	0	0.1	0.1	0.1	0.1	0	0	0	50° 15'	-0.1	-0.1	0	0	0	0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	50° 0'	-0.1	-0.1	-0.1	0	0	0.1	0	0	0.1	

Correct Astronomical Position to WGS84

Latitude 50 to 60 °N										Longitude 4 to 0 °W									
Correction to Latitude										Correction to Longitude									
4°	3°	3°	2°	2°	1°	1°	0°	0°	Longitude	4°	3°	3°	2°	2°	1°	1°	0°	0°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
-0.1	0	0	0	0.1	0.1	0	0	0	60° 0'	0	-0.1	-0.2	-0.2	-0.3	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 45'	-0.1	-0.2	-0.2	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0.1	59° 30'	-0.1	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	59° 15'	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	59° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0.1	0.1	0.1	0	0	0	0	58° 45'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0.1	0.1	0.1	0.1	0	0	0	0	58° 30'	-0.2	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0.1	0.1	0	0	0	0	0	0	58° 15'	-0.3	-0.3	-0.3	-0.2	-0.1	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	58° 0'	-0.3	-0.3	-0.2	-0.1	-0.1	0	-0.1	-0.1	-0.1	
0	0	-0.1	-0.1	-0.1	0	0	0	0	57° 45'	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	-0.1	-0.1	-0.1	0	0	0	0	0	57° 30'	-0.3	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	57° 15'	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	57° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 45'	-0.1	-0.2	-0.2	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 30'	-0.1	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	56° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	-0.1	-0.1	0	0	0	0	0	56° 0'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	-0.1	-0.1	0	0	0	0	0	55° 45'	-0.1	-0.1	-0.2	-0.2	-0.3	-0.2	-0.2	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	55° 30'	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	55° 15'	-0.1	-0.1	-0.2	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	55° 0'	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	54° 45'	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	54° 30'	-0.1	-0.1	-0.1	-0.1	-0.3	-0.3	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	54° 15'	-0.1	-0.1	0	-0.1	-0.3	-0.3	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	54° 0'	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	53° 45'	-0.2	-0.2	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	53° 30'	-0.1	-0.2	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	53° 15'	-0.1	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	53° 0'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	52° 45'	0	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0.1	0	0	0	0	52° 30'	0	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.1	
0	0.1	0	0.1	0.1	0.1	0	0	0	52° 15'	0	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0	0	0	0	0	0	52° 0'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0.1	0.1	0	0	0	0	0	0	0	51° 45'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0.1	0	0	51° 30'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0.1	0	0	51° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	51° 0'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	50° 45'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	50° 30'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	50° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	50° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	