

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0	0	80° 0'	-0.3	-0.4	-0.5	-0.6	-0.7	-0.8	-0.8	-0.9	-0.9	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	79° 45'	-0.4	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 30'	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.6	
0	0	0	0	0	0	0	0	-0.1	79° 15'	-0.5	-0.4	-0.4	-0.3	-0.3	-0.2	-0.3	-0.3	-0.5	
0	0	0	0.1	0.1	0.1	0.1	0.1	0	79° 0'	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1	-0.2	-0.3	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	-1	-1	-0.9	-0.7	-0.5	-0.2	-0.1	0	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	78° 30'	-1.2	-1.3	-1.2	-1	-0.7	-0.4	-0.1	0.1	0.1	
-0.1	0	0	0	0	0	0	0	0.1	78° 15'	-1.3	-1.4	-1.4	-1.2	-0.9	-0.6	-0.3	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	78° 0'	-1.2	-1.4	-1.4	-1.3	-1.1	-0.8	-0.5	-0.3	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	77° 45'	-1	-1.2	-1.3	-1.2	-1.1	-0.9	-0.8	-0.6	-0.5	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	77° 30'	-0.8	-0.9	-1	-1.1	-1	-1	-0.9	-0.8	-0.7	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 15'	-0.6	-0.7	-0.8	-0.9	-0.9	-1	-1	-1	-0.9	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 0'	-0.4	-0.4	-0.5	-0.6	-0.8	-1	-1.1	-1.1	-1.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	76° 45'	-0.2	-0.2	-0.2	-0.4	-0.7	-0.9	-1.1	-1.2	-1.2	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	76° 30'	-0.1	0	0	-0.2	-0.4	-0.8	-1.1	-1.3	-1.3	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	76° 15'	0	0.1	0.2	0.1	-0.2	-0.6	-0.9	-1.2	-1.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	76° 0'	0	0.2	0.4	0.3	0.1	-0.3	-0.8	-1.2	-1.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	75° 45'	0	0.3	0.4	0.4	0.2	-0.1	-0.6	-1.1	-1.4	
0	0	0	0	0	0	0	-0.1	-0.1	75° 30'	0	0.2	0.4	0.5	0.3	0	-0.4	-0.9	-1.3	
0	0	0	0.1	0.1	0.1	0.1	0	0	75° 15'	-0.1	0.1	0.3	0.4	0.3	0.1	-0.2	-0.7	-1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 0'	-0.3	-0.1	0.1	0.2	0.2	0.1	-0.1	-0.4	-0.7	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	74° 45'	-0.4	-0.3	-0.2	0	0.1	0.1	-0.1	-0.3	-0.5	
0	0	0	0	0	0	0.1	0.1	0.1	74° 30'	-0.4	-0.4	-0.3	-0.2	-0.1	-0.1	-0.1	-0.3	-0.4	
0	-0.1	-0.1	0	0	0	0	0	0	74° 15'	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	
0	-0.1	-0.1	-0.1	0	0	0	0	0	74° 0'	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	73° 45'	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	
0	0	0	-0.1	-0.1	0	0	0	0	73° 30'	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.5	-0.6	
0	0	0	0	-0.1	0	0	0	0	73° 15'	-0.2	-0.2	-0.3	-0.3	-0.4	-0.5	-0.5	-0.6	-0.7	
0	0	0	0	0	0	0	0	0	73° 0'	-0.2	-0.1	-0.1	-0.2	-0.4	-0.5	-0.7	-0.8	-0.8	
0	0	0	0	0	0	0	0	0	72° 45'	-0.1	-0.1	0	-0.1	-0.3	-0.5	-0.8	-0.9	-0.9	
0	0	0	0	0	0	0	0	0	72° 30'	-0.1	0	0	0	-0.2	-0.5	-0.7	-0.9	-0.9	
0	0	0	0	0	0	0	0	0	72° 15'	-0.2	-0.1	0	0	-0.1	-0.4	-0.6	-0.8	-0.8	
0	0	0	0	0	0	0	0	0	72° 0'	-0.2	-0.1	0	0	-0.1	-0.3	-0.5	-0.7	-0.7	
0	0	0	0	0	0	0	0	0	71° 45'	-0.2	-0.1	0	0	-0.1	-0.3	-0.5	-0.6	-0.7	
0	0	0	0	0	0.1	0.1	0	0	71° 30'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.3	-0.5	-0.6	-0.7	
0	0	0	0	0.1	0.1	0	0	0	71° 15'	-0.2	-0.2	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6	
0	0	0	0	0	0	0	0	0	71° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	70° 45'	-0.3	-0.2	-0.2	-0.1	-0.2	-0.2	-0.3	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	70° 30'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	70° 15'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5	
0	0	0	0	0	0.1	0	0	0	70° 0'	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.4	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	80° 0'	-0.4	-0.3	-0.3	-0.3	-0.4	-0.5	-0.6	-0.6	-0.7	
0	0	0	0	0	0	0	0	0	79° 45'	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.5	-0.6	-0.7	
0	0	0	0	0	0	0	0.1	0.1	79° 30'	-0.8	-0.7	-0.6	-0.5	-0.5	-0.5	-0.5	-0.6	-0.7	
0	0	0	0	0	0	0	0	0.1	79° 15'	-1	-0.9	-0.7	-0.6	-0.6	-0.6	-0.6	-0.6	-0.7	
0	0	0	0	0	0	0	0	0	79° 0'	-1.1	-0.9	-0.8	-0.7	-0.7	-0.7	-0.7	-0.8	-0.8	
0	0	0	0	0	0	0	0	0	78° 45'	-1	-0.9	-0.8	-0.7	-0.7	-0.8	-0.8	-0.9	-0.9	
0	0	0	0	0	0	0	0	0	78° 30'	-0.8	-0.7	-0.6	-0.6	-0.6	-0.7	-0.8	-0.9	-1	
0.1	0	0	0	0	0	0	0	0	78° 15'	-0.5	-0.4	-0.4	-0.4	-0.5	-0.6	-0.8	-0.9	-1	
0	0	0	0	0	0	0	0	0	78° 0'	-0.3	-0.2	-0.1	-0.2	-0.3	-0.5	-0.7	-0.9	-1	
0	0	0	0	0	0	0	0	0	77° 45'	-0.2	-0.1	0	-0.1	-0.2	-0.4	-0.6	-0.8	-0.9	
0	0	0	0	0	0	0	0	0	77° 30'	-0.2	-0.1	-0.1	-0.1	-0.2	-0.4	-0.5	-0.7	-0.7	
0	0	0	0	0	0	0	0	0	77° 15'	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	-0.4	-0.5	-0.6	
0	0	0	0	0	0	0	0	0	77° 0'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	76° 45'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	76° 30'	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	76° 15'	-0.4	-0.4	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	76° 0'	-0.4	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	75° 45'	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	75° 30'	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	75° 15'	-0.6	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	75° 0'	-0.6	-0.6	-0.5	-0.5	-0.5	-0.4	-0.4	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	74° 45'	-0.7	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0.1	0.1	0.1	74° 30'	-0.7	-0.7	-0.6	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	74° 15'	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 0'	-0.7	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.5	-0.5	
0.1	0.1	0.1	0	0	0	0	0	0	73° 45'	-0.7	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.4	
0	0	0	0	0	0	0	0	0	73° 30'	-0.6	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.5	-0.4	
0	0	0	0	0	0	0	0	0	73° 15'	-0.4	-0.4	-0.4	-0.5	-0.6	-0.6	-0.6	-0.5	-0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	73° 0'	-0.4	-0.4	-0.4	-0.6	-0.7	-0.7	-0.7	-0.6	-0.5	
-0.1	-0.1	-0.1	0	0	0	0	0	0	72° 45'	-0.4	-0.4	-0.5	-0.6	-0.7	-0.8	-0.7	-0.6	-0.5	
0	0	0	0	0	0	0	0	0	72° 30'	-0.4	-0.5	-0.6	-0.7	-0.7	-0.7	-0.7	-0.6	-0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	72° 15'	-0.5	-0.6	-0.6	-0.7	-0.7	-0.7	-0.6	-0.5	-0.4	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	72° 0'	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.4	-0.4	-0.3	
0.1	0.1	0.1	0	0	0	0	0	0	71° 45'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.3	-0.2	-0.2	
0	0	0	0	0	0	0	-0.1	0	71° 30'	-0.5	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	
0	0	0	0	-0.1	-0.1	-0.1	0	0	71° 15'	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	71° 0'	-0.4	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	
0	0	0	0	-0.1	0	0	0	0	70° 45'	-0.3	-0.2	-0.2	-0.2	-0.2	-0.3	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	70° 30'	-0.3	-0.2	-0.1	-0.1	-0.2	-0.4	-0.5	-0.6	-0.5	
0	0	0	0	0	0	0	0	0	70° 15'	-0.4	-0.2	-0.2	-0.1	-0.2	-0.4	-0.5	-0.5	-0.4	
0	0	0	0	0	0	0	0	0	70° 0'	-0.4	-0.3	-0.2	-0.1	-0.2	-0.3	-0.4	-0.5	-0.4	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	80° 0'	-0.7	-0.8	-0.8	-0.8	-0.8	-0.7	-0.7	-0.6	-0.6	
0	0	0	0	0	0	0	0	0	79° 45'	-0.7	-0.8	-0.8	-0.9	-0.9	-0.8	-0.8	-0.7	-0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	79° 30'	-0.7	-0.7	-0.8	-0.8	-0.8	-0.8	-0.8	-0.7	-0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	79° 15'	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	
0	0	0.1	0.1	0.1	0	0	0	0	79° 0'	-0.8	-0.8	-0.7	-0.7	-0.6	-0.5	-0.5	-0.5	-0.6	
0	0	0	0	0	0	0	0	0	78° 45'	-0.9	-0.9	-0.8	-0.7	-0.6	-0.5	-0.5	-0.5	-0.6	
0	0	0	0	0	0	0	0	0	78° 30'	-1	-0.9	-0.8	-0.7	-0.6	-0.5	-0.5	-0.5	-0.6	
0	0	0	0	0	0	0	0	0	78° 15'	-1	-1	-0.9	-0.8	-0.7	-0.6	-0.6	-0.6	-0.6	
0	0	0	0	0	0	0	0	0	78° 0'	-1	-1	-1	-0.9	-0.8	-0.7	-0.6	-0.6	-0.7	
0	0	0	0	0	0	0	0	0	77° 45'	-0.9	-0.9	-0.9	-0.8	-0.7	-0.7	-0.6	-0.6	-0.7	
0	0	0	0	0	0	0	0	0	77° 30'	-0.7	-0.8	-0.8	-0.7	-0.7	-0.6	-0.6	-0.6	-0.7	
0	0	0	0	0	0	0	0	0	77° 15'	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7	
0	0	0	0	0	0	0	0	0	77° 0'	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	
0	0	0	0	0	0	0	0	0	76° 45'	-0.4	-0.5	-0.5	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	
0	0	0	0	0	0	0	0	0	76° 30'	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
0	0	0	0	0	0	0	0	0	76° 15'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6	
0	0	0	0	0	0	0	0	0	76° 0'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	75° 45'	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	75° 30'	-0.4	-0.5	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	
0	0	0	0	0	0.1	0.1	0.1	0.1	75° 15'	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.4	
0	0	0	0	0	0	0	0	0	75° 0'	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	74° 45'	-0.5	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.4	-0.4	
0.1	0.1	0.1	0.1	0	0	0	0	0	74° 30'	-0.6	-0.6	-0.6	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	
0.1	0.1	0.1	0.1	0	0	0	0	0	74° 15'	-0.6	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.4	-0.4	
0.1	0.1	0	0	0	0	0	0	0	74° 0'	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	73° 45'	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	73° 30'	-0.4	-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	73° 15'	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	73° 0'	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	72° 45'	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	72° 30'	-0.5	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	72° 15'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	72° 0'	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	
0	-0.1	-0.1	-0.1	-0.1	0	0	0	0	71° 45'	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	71° 30'	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	71° 15'	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	71° 0'	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	70° 45'	-0.5	-0.4	-0.3	-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	70° 30'	-0.5	-0.4	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	70° 15'	-0.4	-0.3	-0.1	0	0	-0.1	-0.3	-0.3	-0.3	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	70° 0'	-0.4	-0.2	0	0.1	0	-0.1	-0.3	-0.4	-0.4	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N
Longitude 28 to 32 °E

Correction to Latitude
Correction to Longitude

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	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	-0.6	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 45'	-0.7	-0.6	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 30'	-0.7	-0.6	-0.6	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	79° 15'	-0.6	-0.6	-0.6	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	79° 0'	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7	-0.6	-0.5	-0.5	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	78° 30'	-0.6	-0.7	-0.7	-0.8	-0.8	-0.7	-0.6	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	78° 15'	-0.6	-0.7	-0.7	-0.8	-0.7	-0.6	-0.5	-0.5	-0.4	
0	0	0	0	0	0	0	0	0	78° 0'	-0.7	-0.7	-0.7	-0.7	-0.7	-0.6	-0.5	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	77° 45'	-0.7	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	77° 30'	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	
0	0	0	0	0	0	0	0	0	77° 15'	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	
0	0	0	0	0	0	0	0	0	77° 0'	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
0	0	0	0	0	0	0	0	0	76° 45'	-0.7	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	76° 30'	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	76° 15'	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	76° 0'	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	75° 45'	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.5	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	75° 30'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	
0.1	0	0	0	0	0	0	0	0	75° 15'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	75° 0'	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	74° 45'	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	74° 30'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	74° 15'	-0.4	-0.5	-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	74° 0'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	73° 45'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	73° 30'	-0.3	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	73° 15'	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0.1	0.1	0.1	0.1	0.1	0	0	73° 0'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	72° 45'	-0.4	-0.5	-0.4	-0.4	-0.3	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	72° 30'	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	72° 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	0	0	72° 0'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	71° 45'	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	71° 30'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.2	
0	-0.1	-0.1	-0.1	0	0	0	0	0	71° 15'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1	-0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	71° 0'	-0.3	-0.3	-0.4	-0.4	-0.5	-0.4	-0.3	-0.2	-0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	70° 45'	-0.2	-0.2	-0.3	-0.4	-0.5	-0.5	-0.4	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	70° 30'	-0.2	-0.2	-0.3	-0.4	-0.5	-0.5	-0.5	-0.4	-0.3	
0	0	0	0	0	0	0	-0.1	-0.1	70° 15'	-0.3	-0.3	-0.3	-0.4	-0.4	-0.5	-0.4	-0.4	-0.3	
0	0	0	0	0	0	0	0	-0.1	70° 0'	-0.4	-0.4	-0.3	-0.3	-0.4	-0.3	-0.3	-0.3	-0.3	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	-0.4	-0.5	-0.5	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 45'	-0.4	-0.5	-0.5	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 30'	-0.4	-0.5	-0.5	-0.6	-0.7	-0.8	-0.8	-0.8	-0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 15'	-0.4	-0.5	-0.6	-0.6	-0.7	-0.8	-0.8	-0.8	-0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 0'	-0.5	-0.5	-0.5	-0.6	-0.6	-0.7	-0.7	-0.6	-0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	78° 45'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	
0.1	0.1	0.1	0	0	0	0	0	0	78° 30'	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	78° 15'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	78° 0'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	77° 45'	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	77° 30'	-0.6	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	77° 15'	-0.6	-0.6	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	77° 0'	-0.6	-0.6	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	76° 45'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	76° 30'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	76° 15'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	76° 0'	-0.4	-0.4	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	75° 45'	-0.4	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	75° 30'	-0.4	-0.3	-0.3	-0.3	-0.4	-0.4	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	75° 15'	-0.4	-0.4	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	75° 0'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	74° 45'	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	74° 30'	-0.3	-0.4	-0.4	-0.5	-0.5	-0.4	-0.4	-0.4	-0.3	
0	0	0	0	0	0	0	0	0	74° 15'	-0.2	-0.3	-0.4	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	
0	0.1	0.1	0.1	0	0	0	0	0	74° 0'	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	
0	0.1	0.1	0	0	0	0	0	0	73° 45'	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	73° 30'	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	73° 15'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	73° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	72° 45'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	72° 30'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	72° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	72° 0'	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	71° 45'	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	71° 30'	-0.2	-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	71° 15'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	71° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	70° 45'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	70° 30'	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	
-0.1	-0.1	0	0	0	0	0	0	0	70° 15'	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	70° 0'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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 Latitude	36° 0'	36° 30'	37° 0'	37° 30'	38° 0'	38° 30'	39° 0'	39° 30'	40° 0'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	80° 0'	-0.7	-0.7	-0.7	-0.7	-0.7	-0.8	-0.8	-0.8	-0.7
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	79° 45'	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	79° 30'	-0.7	-0.7	-0.6	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	79° 15'	-0.7	-0.6	-0.5	-0.5	-0.4	-0.4	-0.5	-0.5	-0.6
0.1	0.1	0	0	0	0	0	0	0	79° 0'	-0.6	-0.5	-0.4	-0.4	-0.4	-0.4	-0.5	-0.6	-0.6
0	0	0	0	0	0	0	0.1	0	78° 45'	-0.4	-0.4	-0.3	-0.3	-0.4	-0.5	-0.5	-0.6	-0.7
0	0	0	0	0	0.1	0.1	0.1	0	78° 30'	-0.4	-0.3	-0.3	-0.3	-0.4	-0.5	-0.6	-0.6	-0.7
0	0	0	0	0.1	0.1	0.1	0.1	0	78° 15'	-0.4	-0.3	-0.4	-0.4	-0.4	-0.5	-0.6	-0.6	-0.6
0	0	0	0	0.1	0.1	0.1	0.1	0	78° 0'	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.6	-0.6	-0.6
0	0	0	0	0	0	0	0	0	77° 45'	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5
0	0	0	0	0	0	0	0	0	77° 30'	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5
0	0	0	0	0	0	0	0	0	77° 15'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5
0	0	0	0	0	0	0	0	0	77° 0'	-0.4	-0.4	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4
0	0	0	0	0	0	0	0	0	76° 45'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4
0	0	0	0	0	0	0	0	0	76° 30'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4
0	0	0	0	0	0	0	0	0	76° 15'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
0	0	0	0	0	0	0	0	0	76° 0'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
0	0	0	0	0	0	0	0	0	75° 45'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
0	0	0	0	0	0	0	0	0	75° 30'	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.5
0	0	0	0	0	0	0	0	0	75° 15'	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4
0	0	0	0	0	0	0	0	0	75° 0'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4
0	0	0	0	0	0	0	0	0	74° 45'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
0	0	0	0	0	0	0	0	0	74° 30'	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5
0	0	0	0	0	0	0	0	0	74° 15'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4
0	0	0	0	0	0	0	0	0	74° 0'	-0.3	-0.3	-0.4	-0.4	-0.3	-0.3	-0.3	-0.4	-0.4
0	0	0	0	0	0	0	0	0	73° 45'	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.4
0	0	0	0	0	0	0	0	0	73° 30'	-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
0	0	0	0	0	0	0	0	0	73° 15'	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
0	0	0	0	0	0	0	0	0	73° 0'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4
0	0	0	0	0	0	0	0	0	72° 45'	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3
0	0	0	0	0	0	0	0	0	72° 30'	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3
0	0	0	0	0	0	0	0	0	72° 15'	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3
0	0	0	0	0	0	0	0	0	72° 0'	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3
0	0	0	0	0	0	0	0	0	71° 45'	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3
0	0	0	0	0	0	0	0	0	71° 30'	-0.3	-0.3	-0.4	-0.4	-0.5	-0.4	-0.4	-0.3	-0.2
0	0	0	0	0	0	0	0	0	71° 15'	-0.3	-0.3	-0.4	-0.4	-0.5	-0.4	-0.4	-0.3	-0.2
0	0	0	0	0	0	0	0	0	71° 0'	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2
0	0	0	0	0	0	0	0	0	70° 45'	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.3	-0.3	-0.2
0	0	0	0	0	0	0	0	0	70° 30'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2
0	0	0	0	0	-0.1	-0.1	-0.1	0	70° 15'	-0.2	-0.3	-0.3	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3
0	0	0	0	0	0	-0.1	-0.1	0	70° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	-0.7	-0.7	-0.6	-0.5	-0.5	-0.4	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 45'	-0.7	-0.7	-0.6	-0.6	-0.5	-0.4	-0.4	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 30'	-0.6	-0.6	-0.6	-0.5	-0.5	-0.4	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 15'	-0.6	-0.6	-0.6	-0.5	-0.4	-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	79° 0'	-0.6	-0.6	-0.6	-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	-0.7	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 30'	-0.7	-0.6	-0.6	-0.5	-0.4	-0.3	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0	0	0	0	0	0.1	78° 15'	-0.6	-0.6	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.4	
0.1	0.1	0	0	0	0	0.1	0.1	0.1	78° 0'	-0.6	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	
0	0	0	0	0	0.1	0.1	0.1	0.1	77° 45'	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0.1	0.1	77° 30'	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	77° 15'	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	77° 0'	-0.4	-0.4	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.3	
0	0	0	0	0	0	0	0	0	76° 45'	-0.4	-0.4	-0.4	-0.5	-0.4	-0.4	-0.4	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	76° 30'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	76° 15'	-0.5	-0.5	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	76° 0'	-0.5	-0.5	-0.5	-0.4	-0.3	-0.3	-0.3	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	75° 45'	-0.5	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	75° 30'	-0.5	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	75° 15'	-0.4	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	75° 0'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	74° 45'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	74° 30'	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	74° 15'	-0.4	-0.5	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	74° 0'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	73° 45'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	73° 30'	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	73° 15'	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	73° 0'	-0.4	-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	72° 45'	-0.3	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	72° 30'	-0.3	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	72° 15'	-0.3	-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	72° 0'	-0.3	-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	71° 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	0	0	71° 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	71° 15'	-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	71° 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	70° 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	70° 30'	-0.2	-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	70° 15'	-0.3	-0.2	-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	70° 0'	-0.3	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 48 to 52 °E									
Correction to Latitude										Correction to Longitude									
48°	48°	49°	49°	50°	50°	51°	51°	52°	Longitude	48°	48°	49°	49°	50°	50°	51°	51°	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	0.1	0.1	0.1	0.1	0.1	80° 0'	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 45'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.6	-0.6	-0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 30'	-0.5	-0.5	-0.4	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 15'	-0.6	-0.6	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 0'	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 30'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	
0.1	0.1	0	0	0	0	0	0	0	78° 15'	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	78° 0'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	77° 45'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 30'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0	0	0	0.1	0.1	77° 15'	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	77° 0'	-0.4	-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	76° 45'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.3	
0	0	0	0	0	0	0	0	0	76° 30'	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	76° 15'	-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	76° 0'	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	75° 45'	-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	0.1	0.1	75° 30'	-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	0.1	75° 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	75° 0'	-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	0	0	74° 45'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	74° 30'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	74° 15'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	74° 0'	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	73° 45'	-0.3	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	73° 30'	-0.3	-0.4	-0.3	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	73° 15'	-0.3	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	73° 0'	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	72° 45'	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	72° 30'	-0.4	-0.4	-0.3	-0.3	-0.2	-0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	72° 15'	-0.4	-0.4	-0.3	-0.3	-0.2	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	72° 0'	-0.4	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 45'	-0.4	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 30'	-0.4	-0.4	-0.4	-0.2	-0.2	-0.1	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	71° 15'	-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	71° 0'	-0.4	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	70° 45'	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	70° 30'	-0.3	-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	70° 15'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	70° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	-0.6	-0.6	-0.5	-0.5	-0.4	-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	79° 45'	-0.6	-0.6	-0.6	-0.5	-0.3	-0.2	-0.1	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 30'	-0.6	-0.6	-0.5	-0.4	-0.3	-0.1	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 15'	-0.6	-0.5	-0.4	-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	79° 0'	-0.5	-0.4	-0.4	-0.3	-0.3	-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	78° 45'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 30'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	78° 15'	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	78° 0'	-0.4	-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	77° 45'	-0.3	-0.3	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 30'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 15'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	
0	0.1	0	0	0	0	0	0	0	77° 0'	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	76° 45'	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	76° 30'	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0.1	76° 15'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.4	
0	0	0	0	0	0.1	0.1	0.1	0.1	76° 0'	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 45'	-0.2	-0.2	-0.2	-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	75° 30'	-0.2	-0.2	-0.3	-0.3	-0.4	-0.3	-0.2	-0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	75° 15'	-0.3	-0.3	-0.3	-0.4	-0.3	-0.3	-0.1	0	0.2	
0	0	0	0	0	0	0	0	0	75° 0'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	0	0.1	0.3	
0	0	0	0	0	0	0	0	0	74° 45'	-0.2	-0.3	-0.3	-0.3	-0.2	-0.1	0	0.1	0.2	
0	0	0	0	0	0	0	0	0	74° 30'	-0.2	-0.2	-0.3	-0.2	-0.2	-0.1	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	74° 15'	-0.2	-0.3	-0.3	-0.2	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	74° 0'	-0.3	-0.3	-0.2	-0.2	0	0.1	0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	73° 45'	-0.3	-0.3	-0.2	-0.1	0.1	0.2	0.1	0	-0.2	
0	0	0	0	0	0	0	0	0	73° 30'	-0.3	-0.2	-0.1	0	0.2	0.2	0.1	0	-0.2	
0	0	0	0	0	0	0	0	0.1	73° 15'	-0.2	-0.1	-0.1	0	0.1	0.1	0	-0.1	-0.3	
0	0	-0.1	-0.1	0	0	0	0.1	0.1	73° 0'	0	0	0	0	0	0	-0.2	-0.3	-0.4	
0	0	0	0	0	0	0	0.1	0.1	72° 45'	0	0	0	0	-0.1	-0.2	-0.3	-0.4	-0.5	
0	0	0	0	0	0	0	0	0.1	72° 30'	0.1	0	0	-0.1	-0.2	-0.3	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	72° 15'	0	0	0	-0.1	-0.2	-0.4	-0.5	-0.6	-0.5	
0	0	0	0	0	0	0	0	0	72° 0'	-0.1	0	0	-0.1	-0.2	-0.4	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	71° 45'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5	-0.4	
0	0	0	0	0	0	0	0	0	71° 30'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.4	-0.3	
0	0	0	0	0	0	0	0	0	71° 15'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	71° 0'	-0.2	-0.1	-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	70° 45'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	70° 30'	-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	0	70° 15'	-0.2	-0.3	-0.3	-0.4	-0.3	-0.3	-0.2	-0.1	0	
0	0	0	0	0	0	0	0	0	70° 0'	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
0.1	0	0	0	0	0	0	0	0	80° 0'	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6	-0.6	-0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 45'	0	0	-0.1	-0.2	-0.4	-0.5	-0.6	-0.7	-0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 30'	0	0	-0.1	-0.2	-0.4	-0.5	-0.6	-0.6	-0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 15'	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5	-0.5	-0.5	-0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 0'	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 30'	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	78° 15'	-0.2	-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	0.1	78° 0'	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	77° 30'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	
0.1	0	0	0	0	0	0	0	0	77° 15'	-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	77° 0'	-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	76° 45'	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	76° 30'	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.1	
0.1	0.1	0.1	0	0	0	0	0	0	76° 15'	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.1	-0.1	0	
0.1	0.1	0	0	0	0	0	0	0	76° 0'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	0	0	0.1	
0.1	0	0	0	0	0	0	0	0	75° 45'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	75° 30'	0	0.1	0.1	0.1	0	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0.1	75° 15'	0.2	0.3	0.3	0.2	0	-0.2	-0.4	-0.5	-0.5	
0	0	0	0	0	0	0.1	0.1	0.1	75° 0'	0.3	0.3	0.3	0.1	-0.1	-0.3	-0.5	-0.7	-0.7	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	74° 45'	0.2	0.3	0.2	0	-0.2	-0.4	-0.6	-0.7	-0.7	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 30'	0.1	0.1	0	-0.2	-0.3	-0.5	-0.6	-0.6	-0.6	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	74° 15'	0	-0.1	-0.2	-0.3	-0.4	-0.5	-0.5	-0.5	-0.4	
0	0	0	0	0.1	0.1	0.1	0	0	74° 0'	-0.1	-0.2	-0.4	-0.4	-0.5	-0.5	-0.4	-0.4	-0.3	
0	0	0	0	0.1	0.1	0	0	0	73° 45'	-0.2	-0.3	-0.5	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	
0	0	0	0.1	0.1	0.1	0	0	0	73° 30'	-0.2	-0.4	-0.5	-0.6	-0.5	-0.4	-0.3	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	73° 15'	-0.3	-0.5	-0.6	-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	73° 0'	-0.4	-0.5	-0.5	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0	72° 45'	-0.5	-0.5	-0.4	-0.3	-0.2	-0.2	-0.1	-0.2	-0.2	
0.1	0.1	0.1	0	0	0	0	0	0	72° 30'	-0.5	-0.5	-0.4	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	72° 15'	-0.5	-0.4	-0.3	-0.1	-0.1	0	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	72° 0'	-0.5	-0.4	-0.3	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0.1	71° 45'	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	71° 30'	-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	71° 15'	-0.3	-0.2	-0.2	-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	71° 0'	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	70° 45'	-0.1	-0.1	-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	70° 30'	0	0	0	0	-0.1	-0.2	-0.3	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	70° 15'	0	0.1	0.1	0.1	0	-0.1	-0.2	-0.3	-0.4	
0	0	0	0.1	0.1	0.1	0.1	0	0	70° 0'	-0.1	0	0	0	0	-0.1	-0.2	-0.3	-0.3	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 64 to 68 °E									
Correction to Latitude										Correction to Longitude									
64°	64°	65°	65°	66°	66°	67°	67°	68°	Longitude	64°	64°	65°	65°	66°	66°	67°	67°	68°	
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	80° 0'	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 45'	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 30'	-0.5	-0.6	-0.6	-0.6	-0.6	-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	79° 15'	-0.6	-0.6	-0.6	-0.5	-0.5	-0.4	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 0'	-0.6	-0.6	-0.6	-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1	-0.1	-0.2	
0.1	0.1	0	0	0.1	0.1	0.1	0.1	0.1	78° 30'	-0.6	-0.6	-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	
0.1	0	0	0	0	0	0.1	0.1	0.1	78° 15'	-0.5	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0.1	0.1	78° 0'	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	77° 45'	-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	77° 30'	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.5	-0.4	
0	0	0	0	0	0	0	0	0	77° 15'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.4	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	77° 0'	0	0.1	0	0	-0.1	-0.2	-0.4	-0.5	-0.6	
0	0	0	0	0	0	0	0	0	76° 45'	0.1	0.1	0.1	0	-0.1	-0.2	-0.4	-0.5	-0.6	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	76° 30'	0	0.1	0	0	-0.1	-0.3	-0.4	-0.5	-0.6	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	76° 15'	-0.2	-0.1	-0.2	-0.2	-0.3	-0.3	-0.4	-0.5	-0.5	
0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	76° 0'	-0.4	-0.4	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 45'	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 30'	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0	75° 15'	-0.4	-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	
0.1	0.1	0	0	0	0	0	0	0	75° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	
0.1	0	0	0	0	0	0	0	0	74° 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	74° 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	74° 15'	-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	74° 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	73° 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	73° 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	73° 15'	-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	73° 0'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0.1	0.1	0	0	0	0	0	0.1	0	72° 45'	-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	0.1	0.1	72° 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	72° 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	72° 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	71° 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	71° 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	71° 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	71° 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	70° 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	70° 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	70° 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	70° 0'	-0.1	0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 72 to 76 °E									
Correction to Latitude										Correction to Longitude									
72°	72°	73°	73°	74°	74°	75°	75°	76°	Longitude	72°	72°	73°	73°	74°	74°	75°	75°	76°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	-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	0.1	0.1	79° 45'	-0.2	-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	0.1	79° 30'	-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	0.1	0.1	0.1	79° 15'	-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	0.1	0.1	0.1	79° 0'	-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	0.1	78° 45'	-0.1	-0.1	0	0	-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	78° 30'	-0.1	0	0	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	78° 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	78° 0'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	77° 45'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	77° 30'	-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	0.1	77° 15'	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	0.1	77° 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	0.1	0.1	0.2	0.2	76° 45'	-0.3	-0.2	-0.2	-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	76° 30'	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	76° 15'	-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	76° 0'	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	75° 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	75° 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	75° 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	75° 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	74° 45'	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	74° 30'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	74° 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	74° 0'	-0.1	-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	73° 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	73° 30'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	
0.1	0	0	0	0	0	0	0	0	73° 15'	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	73° 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	72° 45'	-0.1	-0.1	-0.1	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	72° 30'	-0.1	-0.1	0	0	0.1	0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	72° 15'	-0.1	0	0	0.1	0.1	0.1	0	0	-0.1	
0	0	0	0	0	0	0	0	0	72° 0'	-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	71° 45'	-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	71° 30'	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	0.1	71° 15'	-0.1	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	71° 0'	-0.1	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	70° 45'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	70° 30'	-0.1	0	0	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	70° 15'	-0.1	0	0	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	70° 0'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 76 to 80 °E									
Correction to Latitude										Correction to Longitude									
76°	76°	77°	77°	78°	78°	79°	79°	80°	Longitude	76°	76°	77°	77°	78°	78°	79°	79°	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	80° 0'	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5	-0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	79° 45'	0	-0.1	-0.2	-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	79° 30'	0	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	79° 15'	0	0	-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	79° 0'	-0.1	-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	78° 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	78° 30'	-0.2	-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	0.1	0.1	0	78° 15'	-0.1	-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	78° 0'	0	0	0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0.1	0.1	0	77° 45'	0	0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	77° 30'	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	77° 15'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	77° 0'	-0.1	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	
0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0	76° 45'	-0.1	-0.1	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	0.1	0	76° 30'	-0.2	-0.1	0	0.1	0.2	0.3	0.3	0.3	0.3	
0	0	0	0	0.1	0.1	0.1	0.1	0	76° 15'	-0.2	-0.2	-0.1	0	0.1	0.2	0.2	0.3	0.3	
0	0	0	0	0	0	0	0.1	0	76° 0'	-0.2	-0.2	-0.2	-0.2	-0.1	0	0	0.1	0.2	
0	0	0	0	0	0	0	0	0	75° 45'	-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	0	75° 30'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	75° 15'	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	75° 0'	-0.1	0	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	74° 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	74° 30'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	74° 15'	-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	0	74° 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	73° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	73° 30'	-0.2	-0.2	-0.1	-0.1	0	0	0	0.1	0	
0	0	0	0	0	0	0	0	0	73° 15'	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	73° 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	72° 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	72° 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	72° 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	72° 0'	-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	71° 45'	0	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 30'	0	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	-0.1	-0.1	
0.1	0	0	0	0	0	0	0	0	71° 15'	0.1	0	-0.1	-0.2	-0.3	-0.3	-0.2	-0.1	-0.1	
0	0.1	0	0	0	0	0	0	0	71° 0'	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	70° 45'	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	70° 30'	-0.1	0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0	0	70° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0.1	0.1	0.1	0	0	0	70° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 80 to 84 °E									
Correction to Latitude										Correction to Longitude									
80° 0'	80° 30'	81° 0'	81° 30'	82° 0'	82° 30'	83° 0'	83° 30'	84° 0'	Longitude Latitude	80° 0'	80° 30'	81° 0'	81° 30'	82° 0'	82° 30'	83° 0'	83° 30'	84° 0'	
0.1	0.1	0.1	0	0	0	0	0	0	80° 0'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	79° 45'	-0.2	-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	79° 30'	-0.2	-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	0.1	79° 15'	-0.2	-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	0.1	0.1	79° 0'	-0.2	-0.2	-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	0.1	78° 45'	-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	0.1	78° 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	78° 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	78° 0'	-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	0.1	0.1	0.1	0.1	77° 45'	-0.4	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	77° 30'	-0.4	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	77° 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	0	0	77° 0'	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	
0.1	0.1	0	0	0	0	0	0	0	76° 45'	0.1	0	-0.1	-0.2	-0.3	-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	76° 30'	0.3	0.1	0	-0.1	-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	76° 15'	0.3	0.2	0.1	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	0.1	76° 0'	0.2	0.2	0.1	0	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	0.1	0.1	0.1	0.1	0	0	0	75° 45'	0	0	0.1	0	0	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	75° 30'	-0.1	-0.1	0	0	0	0	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	75° 15'	-0.2	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	75° 0'	-0.1	0	0	0	0	0	0	0	0	
0.1	0	0	0	0	0	0	0	0.1	74° 45'	0	0	0	0	0	-0.1	-0.1	0	0	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 30'	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	74° 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	74° 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	73° 45'	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	73° 30'	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0	73° 15'	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.3	-0.2	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	73° 0'	-0.1	0	0	0	0	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	72° 45'	-0.1	-0.1	0	0.1	0	0	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	72° 30'	-0.1	-0.1	0	0.1	0	0	-0.2	-0.2	-0.3	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	72° 15'	-0.1	-0.1	0	0	0	-0.1	-0.2	-0.2	-0.2	
0	0	0	0.1	0.1	0.1	0.1	0.1	0	72° 0'	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	71° 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	71° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	71° 15'	-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	71° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0	0	70° 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	70° 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	70° 15'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	70° 0'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	0	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 84 to 88 °E									
Correction to Latitude										Correction to Longitude									
84°	84°	85°	85°	86°	86°	87°	87°	88°	Longitude	84°	84°	85°	85°	86°	86°	87°	87°	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	80° 0'	-0.3	-0.2	-0.1	0	0.1	0.2	0.2	0.3	0.3	
0	0	0	0	0	0	0	0	0	79° 45'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	0.1	
0	0	0	0	0	0	0.1	0.1	0.1	79° 30'	-0.1	-0.2	-0.3	-0.3	-0.3	-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	79° 15'	0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 0'	0	-0.1	-0.2	-0.2	-0.3	-0.4	-0.4	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	0	0	-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	0.1	78° 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	0.1	0.1	0.1	0.1	78° 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	0.1	0.1	78° 0'	-0.2	-0.2	-0.2	-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	77° 45'	-0.2	-0.2	-0.2	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	77° 30'	-0.2	-0.1	-0.1	0	0	0	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	77° 15'	-0.2	-0.1	-0.1	0	0	0	0.1	0	0	
0	0	0	0	0	0	0	0	0	77° 0'	-0.2	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	76° 45'	-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	0.1	0.1	0.1	0.1	0.1	0.1	76° 30'	-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	0.1	0.1	76° 15'	-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	0	0	0	76° 0'	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	75° 45'	-0.2	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	75° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	75° 15'	0	0.1	0.1	0.1	0.1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	75° 0'	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	74° 45'	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	74° 30'	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	74° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	0
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 0'	-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	0.1	0.1	73° 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	0	73° 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	0	73° 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	0	73° 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	0	72° 45'	-0.3	-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	72° 30'	-0.3	-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	72° 15'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0.1	72° 0'	-0.2	-0.2	-0.1	-0.1	0	0	-0.1	-0.1	0	
0	0	0	0	0	0	0	0.1	0.1	71° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
0	0	0	0.1	0.1	0.1	0.1	0.1	0	71° 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	0	71° 15'	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	0	0	0	0
0.1	0.1	0	0	0	0	0	0	0	71° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	70° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	70° 30'	0	0	0	0	-0.1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	70° 15'	0	0	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	70° 0'	0	0	-0.1	-0.1	0	0	0.1	0.1	0.2	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0	0	0	0	0.1	0.1	0.1	0.1	80° 0'	0.3	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	79° 45'	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	79° 30'	-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	0.1	0.1	0.1	0.1	0.1	79° 15'	-0.3	-0.2	-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	79° 0'	-0.3	-0.2	-0.1	0	0	0	0	0	0	
0.1	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	78° 45'	-0.1	-0.1	0	0	0	0	-0.1	-0.1	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 30'	0	0.1	0	0	0	-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	78° 15'	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	78° 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	77° 45'	0	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	77° 30'	0	0	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0.1	0.1	77° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0.1	0.1	77° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0.1	76° 45'	0	0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0	76° 30'	0	0	0	0	-0.1	-0.1	-0.1	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	76° 15'	0	0	0	0	0	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	76° 0'	0.1	0.1	0.1	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	75° 45'	0.1	0.1	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	75° 30'	0	0	0	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	75° 15'	0	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	0.1	75° 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	0.1	74° 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	74° 30'	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	74° 15'	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	0	0	0	74° 0'	0	0	0	-0.1	-0.1	0	0	0	0	
0.1	0.1	0.1	0	0	0	0	0	0	73° 45'	0	0	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	73° 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	73° 15'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0.1	0.1	73° 0'	0	0.1	0.1	0.1	0.1	0	0	0	0.1	
0	0	0	0	0	0	0	0.1	0.1	72° 45'	0	0.1	0.2	0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0.1	0.1	0.1	72° 30'	0.1	0.1	0.2	0.1	0	-0.1	-0.2	-0.2	-0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	72° 15'	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	0.1	0.1	0	72° 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	0	0	71° 45'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	71° 30'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	71° 15'	0	0	0	0	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	71° 0'	0	0	0	0.1	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	70° 45'	0	0	0	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	70° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	-0.1	-0.1	-0.1	70° 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	70° 0'	0.2	0.1	0.1	0	0	0.1	0.2	0.2	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0.1	0.1	0.1	0.1	0.1	80° 0'	0.1	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	0.1	0.1	79° 45'	-0.1	0	0	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	79° 30'	0	0	0.1	0.1	0.2	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	79° 15'	0	0	0.1	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	0.2	0.2	79° 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	0.1	78° 45'	-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	78° 30'	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 15'	-0.1	-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	78° 0'	0	0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	0.1	0.1	0	-0.1	-0.2	-0.2	-0.3	-0.2	-0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 30'	0.1	0	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	77° 15'	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	77° 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	76° 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	76° 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	76° 15'	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	76° 0'	0.1	0.1	0.1	0	0	-0.2	-0.2	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	75° 45'	0.1	0.2	0.2	0.1	0	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0.1	0.1	0.1	0.1	75° 30'	0.1	0.1	0.1	0	0	-0.1	-0.2	-0.2	-0.2	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	75° 15'	0	0	-0.1	-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	75° 0'	-0.1	-0.1	-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	0	0	74° 45'	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	0	0	0	74° 30'	0	0	0	0	0	0	0	0	0	
0.1	0.1	0.1	0	0	0	0	0	0	74° 15'	0	0	0.1	0.1	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	74° 0'	0	0.1	0.1	0.1	0.1	0.1	0.1	0	-0.1	
0	0	0	0	0	0	0	0	0.1	73° 45'	0.1	0.1	0.1	0.1	0.1	0	0	-0.1	-0.2	
0	0	0	0	0	0	0.1	0.1	0.1	73° 30'	0.1	0.1	0.1	0.1	0	-0.1	-0.2	-0.3	-0.3	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 15'	0.1	0.1	0.1	0	-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	73° 0'	0.1	0.1	0	-0.1	-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	72° 45'	-0.1	-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	0.1	0	72° 30'	-0.2	-0.2	-0.2	-0.2	-0.1	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	72° 15'	-0.2	-0.2	-0.2	-0.2	-0.1	0	0.1	0.3	0.3	
0	0	0	0	0	0	0	0	0	72° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0.2	0.3	
0	0	0	0	0	0	0	0	0	71° 45'	0	0	0	-0.1	-0.1	0	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	71° 30'	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	0.1	71° 15'	-0.1	0	0	0	0	0	0.1	0.1	0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	71° 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	70° 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	0	70° 30'	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	0	0	70° 15'	0.1	0	0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	70° 0'	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 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	0.1	0.1	79° 45'	0.2	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	0.1	79° 30'	0.3	0.3	0.2	0.1	0.1	0	-0.1	-0.1	-0.1	
0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	79° 15'	0.2	0.1	0.1	0	0	0	0	0	0	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	79° 0'	-0.1	-0.1	-0.1	-0.1	0	0.1	0.2	0.2	0.3	
0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	78° 45'	-0.2	-0.2	-0.2	-0.1	0	0.2	0.3	0.5	0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 30'	-0.3	-0.3	-0.2	-0.2	0	0.1	0.3	0.5	0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 15'	-0.2	-0.2	-0.2	-0.2	-0.1	0	0.2	0.4	0.5	
0.1	0.1	0.1	0.1	0	0	0	0.1	0.1	78° 0'	-0.2	-0.2	-0.2	-0.1	-0.1	0	0.1	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	77° 45'	-0.2	-0.1	-0.1	0	0	0	0.1	0.1	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 30'	-0.2	-0.1	0	0	0	0.1	0.1	0.1	0.2	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	77° 15'	-0.1	-0.1	0	0	0	0	0	0.1	0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 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	0	76° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0.2	
0	0.1	0.1	0.1	0	0	0	0	0	76° 30'	-0.2	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	76° 15'	-0.2	-0.2	-0.1	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	76° 0'	-0.2	-0.2	-0.1	0	0	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	75° 45'	-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	0.1	0.1	0	75° 30'	-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	0.1	0.1	75° 15'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0.1	
0.1	0	0	0	0	0	0	0.1	0.1	75° 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	0.1	74° 45'	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	74° 30'	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	74° 15'	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	74° 0'	-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	0	73° 45'	-0.2	-0.3	-0.3	-0.3	-0.2	-0.1	0	0.1	0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	73° 30'	-0.3	-0.3	-0.3	-0.2	-0.1	0	0.1	0.2	0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0	73° 15'	-0.3	-0.3	-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	73° 0'	-0.2	-0.1	0	0.1	0.1	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 45'	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	72° 30'	0.2	0.2	0.1	0.1	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	72° 15'	0.3	0.2	0.1	0	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	72° 0'	0.3	0.2	0.1	0	0	0.1	0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	71° 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	71° 30'	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0	
0.1	0.1	0.1	0	0	0	0	0	0	71° 15'	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	0.1	0.1	0.1	0.1	71° 0'	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	0.1	0.1	70° 45'	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	0.1	0.1	70° 30'	0	0.1	0.1	0.1	0.1	0	0	0.1	0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	70° 15'	-0.1	0	0.1	0.1	0	0	0	0	0	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	70° 0'	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	0.1	0.1	0	0	0	-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	79° 45'	-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	79° 30'	-0.1	-0.1	-0.1	0	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	79° 15'	0	0	0.1	0.2	0.2	0.3	0.4	0.4	0.4	
0.1	0.1	0.1	0.1	0	0	0	0	0.1	79° 0'	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	0.6	0.7	0.8	0.7	0.6	0.4	0.3	0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 30'	0.7	0.8	0.9	0.8	0.7	0.5	0.3	0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 15'	0.5	0.7	0.8	0.8	0.7	0.6	0.4	0.2	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 0'	0.3	0.5	0.6	0.6	0.6	0.6	0.5	0.4	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.4	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 30'	0.2	0.3	0.4	0.4	0.5	0.4	0.4	0.4	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 15'	0.2	0.3	0.4	0.4	0.5	0.4	0.4	0.3	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 0'	0.1	0.3	0.4	0.5	0.5	0.4	0.4	0.3	0.2	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	76° 45'	0.2	0.3	0.4	0.4	0.4	0.4	0.3	0.2	0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	76° 30'	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	76° 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	76° 0'	0	0	0.1	0.1	0.2	0.2	0.3	0.2	0.2	
0	0	0	0	0	0	0	0	0.1	75° 45'	-0.1	0	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	75° 30'	0	0.1	0.1	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	75° 15'	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	0.1	0.1	0.1	75° 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	0.1	0.1	0.1	0	74° 45'	-0.1	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	74° 30'	-0.2	-0.1	0	0.1	0.1	0.2	0.2	0.2	0.1	
0.1	0	0	0	0	0	0	0	0	74° 15'	-0.2	-0.1	0	0.1	0.2	0.3	0.3	0.2	0.1	
0	0	0	0	0	0	0	0	0.1	74° 0'	-0.1	0	0.1	0.1	0.2	0.2	0.2	0.1	0	
0	0	0	0	0	0	0	0.1	0.1	73° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0	-0.1	-0.2	
0	0	0	0	0	0.1	0.1	0.1	0.1	73° 30'	0.2	0.1	0.1	0	0	-0.1	-0.1	-0.2	-0.2	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	73° 15'	0.2	0.1	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	73° 0'	0.1	0	-0.1	-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	0	72° 45'	0	-0.1	-0.2	-0.3	-0.2	-0.2	-0.1	0	0.2	
0	0	0	0.1	0.1	0.1	0	0	0	72° 30'	-0.1	-0.2	-0.3	-0.3	-0.2	-0.1	0	0.2	0.3	
0	0	0	0	0	0	0	0	0	72° 15'	-0.1	-0.2	-0.3	-0.3	-0.2	-0.1	0.1	0.2	0.3	
0	0	0	0	0	0	0	0	0	72° 0'	-0.1	-0.2	-0.4	-0.4	-0.2	0	0.2	0.3	0.3	
0	0	0	0	0	0	0	0	0	71° 45'	-0.1	-0.3	-0.4	-0.4	-0.2	0	0.2	0.3	0.3	
0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	71° 30'	0	-0.2	-0.3	-0.3	-0.2	0	0.2	0.3	0.3	
0	0	0	-0.1	-0.1	-0.1	0	0	0	71° 15'	0.1	-0.1	-0.2	-0.2	-0.2	-0.1	0.1	0.2	0.2	
0.1	0	0	0	0	0	0	0	0	71° 0'	0.2	0.1	0	-0.1	-0.2	-0.1	0	0.1	0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0	70° 45'	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	0	70° 30'	0.1	0.1	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	0.1	70° 15'	0	0.1	0	0	0	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	70° 0'	0	0	0	0	0	0.1	0.2	0.2	0.3	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	80° 0'	-0.2	-0.3	-0.3	-0.4	-0.5	-0.6	-0.6	-0.6	-0.6	
0.1	0	0	0	0	0	0	0	0	79° 45'	0.1	0.1	0	-0.2	-0.3	-0.5	-0.6	-0.7	-0.8	
0.1	0	0	0	0	0	0	0	0	79° 30'	0.4	0.3	0.2	0.1	-0.1	-0.3	-0.5	-0.7	-0.8	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	79° 15'	0.4	0.4	0.3	0.2	0.1	-0.1	-0.3	-0.4	-0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	79° 0'	0.2	0.2	0.2	0.2	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	78° 45'	0	-0.1	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	0.1	78° 30'	-0.1	-0.1	-0.1	0	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	78° 15'	0.1	0	0	0	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	78° 0'	0.3	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	0.1	77° 45'	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 30'	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 0'	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	0	76° 45'	0.1	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	0	76° 30'	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.2	
0	0	0	0	0	0	0	0	0	76° 15'	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.3	0.3	
0	0	0	0	0	0	0	0	0	76° 0'	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 45'	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 30'	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 15'	-0.1	0	0.1	0.2	0.3	0.4	0.4	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 0'	-0.1	0	0.2	0.3	0.3	0.4	0.3	0.3	0.2	
0	0	0	0	0	0.1	0.1	0.1	0.1	74° 45'	0	0.1	0.2	0.2	0.3	0.2	0.2	0.1	0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	74° 30'	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	74° 15'	0.1	0	0	0	0	0	0.1	0.1	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	74° 0'	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	0	0	0	73° 45'	-0.2	-0.2	-0.1	0	0.1	0.2	0.3	0.2	0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0	73° 30'	-0.2	-0.1	0	0.1	0.2	0.3	0.3	0.2	0.1	
0.1	0.1	0.1	0	0	0	0	0	0	73° 15'	-0.1	0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	
0.1	0	0	0	0	0	0	0	0	73° 0'	0	0.1	0.2	0.3	0.3	0.3	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	72° 45'	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 30'	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 15'	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	72° 0'	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	71° 45'	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	71° 30'	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	71° 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	71° 0'	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	
0	0	0	0	0	0	0	0	0	70° 45'	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	
0	0	0	0	0	0	0.1	0.1	0	70° 30'	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	
0.1	0	0	0	0	0.1	0.1	0.1	0.1	70° 15'	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	
0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	70° 0'	0.3	0.3	0.2	0.2	0.1	0.1	0.2	0.3	0.3	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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°	
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	80° 0'	-0.6	-0.6	-0.5	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	79° 45'	-0.8	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	79° 30'	-0.8	-0.8	-0.7	-0.6	-0.5	-0.4	-0.3	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	79° 15'	-0.5	-0.6	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	-0.5	
0	0	0	0	0	0	0	0	0	79° 0'	-0.2	-0.3	-0.5	-0.6	-0.7	-0.8	-0.8	-0.8	-0.8	
0.1	0	0	0	0	0	0	0	0	78° 45'	0.2	0	-0.2	-0.4	-0.6	-0.7	-0.8	-0.9	-0.8	
0.1	0.1	0.1	0.1	0	0	0	0	0	78° 30'	0.3	0.2	0	-0.2	-0.4	-0.5	-0.6	-0.6	-0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	78° 15'	0.2	0.1	0	-0.1	-0.3	-0.3	-0.4	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	78° 0'	0	0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	0	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	77° 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	0	0	0	0	77° 30'	0	0	0	0	0.1	0.2	0.3	0.3	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	77° 15'	0	0	0.1	0.1	0.2	0.3	0.4	0.4	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 0'	0	0	0	0.1	0.2	0.3	0.4	0.5	0.4	
0	0	0	0	0	0.1	0.1	0.1	0.1	76° 45'	0.1	0	0	0	0.1	0.3	0.4	0.5	0.5	
0	0	0	0	0	0	0	0	0	76° 30'	0.2	0	0	0	0.1	0.2	0.3	0.5	0.5	
0	0	0	0	0	0	0	0	0	76° 15'	0.3	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	76° 0'	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	
0.1	0	0	0	0	0	0	0	0	75° 45'	0.4	0.4	0.4	0.3	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	75° 30'	0.4	0.4	0.4	0.4	0.3	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	75° 15'	0.4	0.4	0.4	0.3	0.3	0.2	0	-0.1	-0.1	
0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	75° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0	
0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	74° 45'	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	0.1	74° 30'	0	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	74° 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	74° 0'	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0.1	0	0	73° 45'	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0.1	0	73° 30'	0.1	0.1	0	0	0	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	73° 15'	0.1	0	0	0	0	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	73° 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	72° 45'	0.1	0.1	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 30'	0.1	0.1	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 15'	0.1	0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 0'	0.1	0	0	-0.1	-0.1	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	71° 45'	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	0	0.1	
0	0	0	0	0	0	0	0	0	71° 30'	0.1	0.1	0	-0.1	-0.1	-0.2	-0.1	0	0.1	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	71° 15'	0.1	0.1	0	0	-0.1	-0.2	-0.2	-0.1	0	
0	0	0	0	0	0	0	0	0	71° 0'	0.2	0.1	0	0	-0.1	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	70° 45'	0.2	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	70° 30'	0.2	0.2	0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	
0.1	0.1	0	0	0	0	0	0	0	70° 15'	0.3	0.2	0.1	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	70° 0'	0.3	0.3	0.2	0	-0.1	-0.2	-0.2	-0.2	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N

Longitude 112 to 116 °E

Correction to Latitude

Correction to Longitude

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'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	0.2	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	79° 45'	-0.1	-0.1	-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	79° 30'	-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	0.1	0	79° 15'	-0.5	-0.4	-0.3	-0.2	-0.1	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	79° 0'	-0.8	-0.6	-0.5	-0.3	-0.1	0.1	0.2	0.3	0.3	
0	0	0	0	0	0	0	0	0	78° 45'	-0.8	-0.7	-0.5	-0.2	0	0.1	0.2	0.3	0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 30'	-0.6	-0.5	-0.3	-0.1	0	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	78° 15'	-0.3	-0.2	-0.1	0	0.1	0.1	0	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	78° 0'	0	0.1	0.1	0.1	0.1	0	0	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	77° 45'	0.1	0.1	0.1	0.1	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	77° 30'	0.2	0.1	0	-0.1	-0.1	-0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	77° 15'	0.3	0.1	0	-0.1	-0.2	-0.2	-0.1	0.1	0.2	
0.1	0.1	0	0	0	0	0	0	0	77° 0'	0.4	0.2	0.1	-0.1	-0.2	-0.2	-0.1	0.1	0.2	
0.1	0	0	0	0	0	0	0	0	76° 45'	0.5	0.4	0.2	0	-0.1	-0.2	-0.2	-0.1	0.1	
0	0	0	0	0	0	0	0	0	76° 30'	0.5	0.5	0.3	0.1	0	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	76° 15'	0.4	0.4	0.3	0.2	0	-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	76° 0'	0.1	0.2	0.2	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	75° 45'	-0.1	-0.1	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	75° 30'	-0.2	-0.2	-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	0.1	75° 15'	-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	0.1	75° 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	74° 45'	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	74° 30'	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.1	0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	74° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	74° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	73° 45'	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	0.1	73° 30'	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	73° 15'	0.2	0.2	0.2	0.2	0.1	0.1	0	0	0	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	73° 0'	0.1	0.1	0.2	0.2	0.1	0.1	0	0	0	
0	0	0	0	0	0.1	0	0	0	72° 45'	0	0.1	0.1	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	72° 30'	0	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 15'	0	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 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	71° 45'	0.1	0.2	0.2	0.1	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	71° 30'	0.1	0.1	0.2	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	71° 15'	0	0	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	71° 0'	-0.1	-0.1	0	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0.1	0	0	0	70° 45'	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0.1	0.1	0.1	70° 30'	-0.1	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0.1	70° 15'	-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	70° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0.1	0.1	0.1	0.1	0.1	0	80° 0'	0.2	0.2	0.2	0.2	0.1	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	79° 45'	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	79° 30'	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	79° 15'	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	0.1	0.1	0	79° 0'	0.3	0.2	0.1	0.1	0	0	0	0	0	0
0	0	0	0	0	0	0	0.1	0	78° 45'	0.2	0.1	0	-0.1	-0.2	-0.2	-0.1	-0.1	0	0
-0.1	0	0	0	0	0	0	0	0	78° 30'	0	-0.1	-0.3	-0.3	-0.4	-0.3	-0.2	-0.1	0.1	0.1
0	0	0	0	0	0	0	0	0	78° 15'	-0.2	-0.3	-0.4	-0.5	-0.5	-0.4	-0.2	0	0.1	0.1
0	0	0	0	0	-0.1	-0.1	-0.1	0	78° 0'	-0.2	-0.3	-0.4	-0.4	-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	77° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	0.2	0.2
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	77° 30'	0.1	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	77° 15'	0.2	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.1
0	0.1	0.1	0.1	0.1	0	0	0	0	77° 0'	0.2	0.4	0.5	0.5	0.4	0.3	0.2	0.2	0.2	0.1
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	76° 45'	0.1	0.3	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2
0	0	0	0.1	0.1	0.1	0.1	0.1	0	76° 30'	-0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2
0	0	0	0	0.1	0.1	0.1	0.1	0	76° 15'	-0.1	0	0.1	0.2	0.3	0.3	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	76° 0'	-0.1	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	0.1	0.1	0.1	0	75° 45'	0	0	0.1	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	0	0	75° 30'	0	0	0.1	0.1	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	0	0	75° 15'	0	0	0.1	0.1	0.2	0.3	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	75° 0'	0	0	0.1	0.1	0.2	0.3	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	74° 45'	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	0.1	0.1	0.1	0.1	0.1	0	74° 30'	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	0.1	0	74° 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	0	74° 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	0	73° 45'	0.1	0.1	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	0.1	0.1	0	73° 30'	0.1	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	0.1	0.1	0.1	0.1	0	73° 15'	0	0.1	0.1	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	0	73° 0'	0	0	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	72° 45'	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	0	0	0	72° 30'	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	0	72° 15'	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	0	72° 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	0	71° 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	0	71° 30'	0	0.1	0.1	0.1	0	0	0.1	0.1	0.2	0.2
0	0	0	0	0	0	0	0	0	71° 15'	0	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	71° 0'	0	0	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	70° 45'	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
0.1	0	0	0	0	0	0	0	0	70° 30'	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	70° 15'	0.1	0.1	0.1	0.1	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	70° 0'	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 120 to 124 °E									
Correction to Latitude										Correction to 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'	
0.1	0.1	0.1	0	0	0	0	0	0	80° 0'	0	0	0.1	0.2	0.2	0.3	0.2	0.2	0.1	
0.1	0	0	0	0	0	0.1	0.1	0.1	79° 45'	0.2	0.2	0.3	0.3	0.3	0.2	0.1	0	-0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 30'	0.2	0.2	0.2	0.2	0.1	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	79° 15'	0.1	0.1	0.1	0.1	0	-0.1	-0.2	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	79° 0'	0	0.1	0.1	0.1	0	-0.1	-0.1	-0.2	-0.2	
0.1	0.1	0	0	0	0	0	0	0	78° 45'	0	0.1	0.1	0.2	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	78° 30'	0.1	0.2	0.3	0.3	0.3	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	78° 15'	0.1	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	78° 0'	0.2	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	77° 45'	0.2	0.2	0.2	0.1	0	0	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 30'	0.2	0.1	0.1	0	-0.1	-0.2	-0.3	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	77° 15'	0.1	0.1	0	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	
0	0	0	0	0	0	0	0	0	77° 0'	0.1	0.1	0.1	0	-0.1	-0.1	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0	76° 45'	0.2	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	76° 30'	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	0	0	76° 15'	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	0	76° 0'	0.1	0	0	0.1	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	75° 45'	0.1	0	0	0.1	0.2	0.3	0.3	0.3	0.3	
0	0	0	0	0	0	0	0.1	0.1	75° 30'	0.1	0.1	0	0	0.1	0.2	0.3	0.3	0.3	
0	0	0	0	0	0	0.1	0.1	0.1	75° 15'	0.2	0.1	0	0	0.1	0.1	0.2	0.2	0.3	
0.1	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	75° 0'	0.2	0.1	0.1	0	0	0	0.1	0.1	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 45'	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	74° 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	74° 15'	0.1	0.1	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	74° 0'	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	73° 45'	0.2	0.2	0.1	0.1	0	0	0	0.1	0.1	
0.1	0.1	0.1	0.1	0	0	0	0.1	0.1	73° 30'	0.2	0.2	0.2	0.1	0	0	0	0	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	73° 15'	0.2	0.2	0.2	0.1	0.1	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	73° 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	72° 45'	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	72° 30'	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	0	72° 15'	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0	
0	0	0	0	0	0	0	0	0	72° 0'	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0	
0	0	0	0	0	0	0	0	0	71° 45'	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0	
0	0	0	0	0	0	0	0	0	71° 30'	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	0	71° 15'	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	0	71° 0'	0.2	0.2	0.2	0.1	0.1	0.1	0	0	0	
0	0	0	0	0	0	0	0.1	0.1	70° 45'	0.2	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	70° 30'	0.2	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	0.1	70° 15'	0.2	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	70° 0'	0.2	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'		
										Latitude										
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	0.1	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	79° 45'	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	79° 30'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	0	-0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	79° 15'	-0.3	-0.2	-0.2	-0.1	0.1	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	0	79° 0'	-0.2	-0.1	0	0.1	0.2	0.3	0.3	0.3	0.2	
0	0	0	0	0	0	0	0	0	0	78° 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	0	78° 30'	0.1	0.1	0	0	0	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	0	78° 15'	0.1	0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	-0.1	78° 0'	0	0	0	0	0	-0.1	0	0	0.2	
0	0	0	0	0	0	0	0	-0.1	-0.1	77° 45'	-0.1	-0.1	0	0	0	0.1	0.1	0.2	0.4	
-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 30'	-0.2	-0.2	-0.1	0	0.1	0.2	0.2	0.3	0.4	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 15'	-0.2	-0.1	0	0.1	0.2	0.2	0.2	0.3	0.3	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	77° 0'	-0.2	-0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	0	76° 45'	-0.1	0	0.1	0.2	0.2	0.3	0.2	0.1	0	
0	0	0	0	0	0	0	0	0	0	76° 30'	0	0	0.1	0.1	0.2	0.2	0.2	0.1	0	
0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	76° 15'	0.1	0	0	0.1	0.1	0.1	0.2	0.1	0.1	
0	0	0	0	0	0	0.1	0.1	0.1	0.1	76° 0'	0.2	0.1	0	0	0	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	0.1	75° 45'	0.3	0.2	0.1	0	-0.1	-0.1	0	0.1	0.1	
0.1	0.1	0	0	0	0	0	0	0	0	75° 30'	0.3	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	0	0	0	75° 15'	0.3	0.2	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	0	0	0	75° 0'	0.2	0.2	0.2	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	0	74° 45'	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	74° 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	0.1	74° 15'	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	0.1	74° 0'	0.1	0.1	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	0.1	0.1	73° 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	0.1	0.1	73° 30'	0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	73° 15'	0	0.1	0.1	0.1	0.1	0.1	0	0	0.1	
0	0	0	0.1	0.1	0	0	0	0	0	73° 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	0	72° 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	0	72° 30'	0	0	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	0	72° 15'	0	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	0	72° 0'	0	-0.1	-0.1	-0.1	-0.1	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	0	71° 45'	0	0	-0.1	-0.1	-0.1	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	0	71° 30'	0	0	-0.1	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0.1	0.1	0.1	0.1	71° 15'	0	0	-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	71° 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	0	70° 45'	-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	0	0	70° 30'	-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	0	0	0	70° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	0.2	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	70° 0'	-0.1	-0.1	-0.1	0	0	0.1	0.2	0.2	0.3	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 128 to 132 °E									
Correction to Latitude										Correction to Longitude									
128°	128°	129°	129°	130°	130°	131°	131°	132°	Longitude	128°	128°	129°	129°	130°	130°	131°	131°	132°	
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	80° 0'	-0.2	-0.2	-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	79° 45'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	79° 30'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	0	0.1	
0	0	0	0	0	0	0	0	0	79° 15'	0.2	0.1	0	-0.1	-0.1	-0.1	-0.1	0	0.1	
0	0	0	0	0	0	0	-0.1	-0.1	79° 0'	0.2	0.1	0.1	0	0	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	-0.1	-0.1	78° 45'	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.5	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	78° 30'	0	0.1	0.2	0.3	0.5	0.6	0.7	0.7	0.6	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 15'	0	0.2	0.4	0.5	0.7	0.8	0.8	0.7	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 0'	0.2	0.4	0.6	0.7	0.8	0.8	0.7	0.6	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 45'	0.4	0.5	0.7	0.8	0.8	0.8	0.6	0.4	0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	77° 30'	0.4	0.5	0.6	0.7	0.7	0.7	0.5	0.3	0.1	
-0.1	-0.1	0	0	0	0	0	0.1	0.1	77° 15'	0.3	0.3	0.4	0.5	0.5	0.5	0.4	0.3	0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	77° 0'	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.2	
0	0	0	0	0	0.1	0.1	0.1	0.1	76° 45'	0	-0.1	-0.1	0	0	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0.1	76° 30'	0	-0.1	-0.1	-0.1	-0.1	0	0.1	0.2	0.1	
0.1	0.1	0	0	0	0	0	0	0	76° 15'	0.1	0.1	0	0	0	0	0	0.1	0.1	
0.1	0.1	0	0	0	0	0	0	0.1	76° 0'	0.2	0.2	0.1	0.1	0	0	0	0	0	
0.1	0.1	0.1	0	0	0	0	0	0	75° 45'	0.1	0.2	0.2	0.1	0	0	-0.1	-0.1	-0.1	
0	0.1	0.1	0.1	0.1	0	0	0	0	75° 30'	0.1	0.1	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	0	0	75° 15'	0	0.1	0.1	0.2	0.1	0.1	0	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0	0	75° 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	0.1	0.1	74° 45'	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	74° 30'	0.1	0.1	0	0	0	0	0.1	0.1	0.1	
0.1	0.1	0.1	0	0	0	0	0	0	74° 15'	0.1	0.1	0.1	0	0	0	0.1	0.1	0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0	74° 0'	0.2	0.2	0.2	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	73° 45'	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	0.1	0	0	0	73° 30'	0.1	0.1	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	0	73° 15'	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.2	
0	0	0	0	0	0	0	0	0	73° 0'	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	72° 45'	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	72° 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	72° 15'	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	72° 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	71° 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	71° 30'	0	0	0	0	0.1	0.1	0.2	0.2	0.2	
0.1	0.1	0	0	0	0	0	0	0	71° 15'	0	0	0	0.1	0.1	0.2	0.2	0.2	0.2	
0.1	0.1	0	0	0	0	0	0	0	71° 0'	0	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	70° 45'	0.1	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	70° 30'	0.2	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	70° 15'	0.2	0.3	0.4	0.3	0.2	0.1	0	0	0.1	
0	-0.1	-0.1	-0.1	0	0	0	0	0	70° 0'	0.3	0.4	0.4	0.3	0.2	0.1	0	0	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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										
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 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	0.1	0.1	0.1	79° 45'	0.1	0.2	0.3	0.2	0.2	0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	79° 30'	0.1	0.2	0.3	0.2	0.2	0	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	79° 15'	0.1	0.2	0.2	0.2	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	79° 0'	0.2	0.3	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	-0.2	78° 45'	0.5	0.4	0.4	0.3	0.1	0	0	0	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	78° 30'	0.6	0.5	0.4	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	78° 15'	0.6	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.3	
-0.1	-0.1	-0.1	0	0	0	0	0	0	78° 0'	0.4	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.3	
-0.1	0	0	0	0	0	0	0	0.1	77° 45'	0.2	0	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0.1	77° 30'	0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	
0.1	0	0	0	0	0.1	0.1	0.1	0.1	77° 15'	0.1	0	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 0'	0.2	0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.3	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	76° 45'	0.2	0.1	-0.1	-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	0	76° 30'	0.1	0.1	0	-0.2	-0.2	-0.3	-0.2	-0.1	0.1	
0	0.1	0.1	0.1	0	0	0	0	0	76° 15'	0.1	0	0	-0.1	-0.2	-0.2	-0.1	0	0.2	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	76° 0'	0	0	0	-0.1	-0.1	-0.1	0	0.1	0.2	
0	0.1	0.1	0.1	0.1	0	0	0	0	75° 45'	-0.1	-0.1	-0.1	0	0	0	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	75° 30'	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	75° 15'	-0.1	-0.1	-0.1	0	0.1	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	75° 0'	0	0	0	0	0	0.1	0.1	0.2	0.2	
0.1	0	0	0	0	0	0	0	0	74° 45'	0.1	0.1	0	0	0	0	0.1	0.1	0.1	
0.1	0	0	0	0	0	0	0	0	74° 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	74° 15'	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	0	0	74° 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	73° 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	73° 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	73° 15'	0.2	0.2	0.1	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	73° 0'	0.3	0.2	0.1	0.1	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 45'	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	0	0	72° 30'	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	72° 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	72° 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	71° 45'	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	71° 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	71° 15'	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	0	0	71° 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	70° 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	70° 30'	0.1	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	70° 15'	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	70° 0'	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 140 to 144 °E									
Correction to Latitude										Correction to 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	80° 0'	0.6	0.7	0.7	0.6	0.5	0.4	0.3	0.2	0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	79° 45'	1	1	0.9	0.8	0.6	0.4	0.3	0.2	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	79° 30'	1.3	1.2	1	0.8	0.5	0.3	0.1	0	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	79° 15'	1.3	1.1	0.9	0.6	0.3	0.1	0	-0.1	-0.1	
-0.1	-0.1	0	0	0	0	0	0	0	79° 0'	1	0.8	0.5	0.3	0	-0.1	-0.1	-0.1	0	
0	0	0	0	0.1	0.1	0.1	0.1	0	78° 45'	0.5	0.3	0.1	-0.1	-0.2	-0.2	-0.1	0	0.1	
0	0	0.1	0.1	0.1	0.1	0	0	0	78° 30'	0	-0.1	-0.2	-0.2	-0.2	-0.1	0	0.1	0.2	
0	0	0	0	0	0	0	0	0	78° 15'	-0.3	-0.3	-0.3	-0.2	-0.1	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	78° 0'	-0.3	-0.3	-0.2	-0.1	0	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	77° 45'	-0.1	0	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	77° 30'	0.2	0.1	0.1	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	77° 15'	0.3	0.2	0.1	0	-0.1	-0.1	-0.1	0	0.1	
0	0	0	0	0	0	0	0	0	77° 0'	0.2	0.1	0	-0.1	-0.1	-0.1	-0.1	0	0.1	
0	0	0	0	0	0	0	0	0	76° 45'	0	0	-0.1	-0.1	-0.1	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	76° 30'	-0.2	-0.2	-0.2	-0.1	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	76° 15'	-0.2	-0.2	-0.1	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	76° 0'	-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	75° 45'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	75° 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	75° 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	75° 0'	0.1	0.1	0.1	0.1	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	74° 45'	0.1	0.1	0	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	74° 30'	0.1	0	0	0	0	0	0.1	0.1	0.1	
0.1	0.1	0.1	0	0	0	0	0	0	74° 15'	0.1	0	0	0	0	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	74° 0'	0.1	0	0	0	0.1	0.1	0.2	0.3	0.2	
0	0	0	0	0	0	0	0	0	73° 45'	0.1	0.1	0	0	0.1	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	73° 30'	0.2	0.1	0	0	0	0.1	0.1	0.2	0.1	
0	0	0	0	0	0	0	0	0	73° 15'	0.2	0.1	0.1	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	73° 0'	0.2	0.1	0.1	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 45'	0.2	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	72° 30'	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	72° 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	72° 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	71° 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	71° 30'	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	71° 15'	0.1	0.1	0.1	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	71° 0'	0.1	0.1	0.1	0.1	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	70° 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	70° 30'	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	70° 15'	0.1	0	0	0	0	0.1	0.1	0.1	0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	70° 0'	0	0	-0.1	0	0	0	0.1	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	-0.1	-0.1	-0.1	-0.1	80° 0'	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	
0	0	0	0	0	0	0	0	0	79° 45'	0.1	0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	79° 30'	0	0	0	0.1	0.1	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	79° 15'	-0.1	0	0	0.1	0.1	0.1	0	0	-0.1	
0	0	0	0	0	0	0	0	0	79° 0'	0	0	0.1	0.1	0.1	0	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	78° 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	78° 30'	0.2	0.2	0.2	0.2	0.1	0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	78° 15'	0.2	0.2	0.1	0.1	0	0	0	0.1	0.2	
0	0	0	0	0	0	0	0.1	0.1	78° 0'	0.2	0.1	0	0	-0.1	-0.1	0	0.1	0.2	
0	0	0	0	0	0	0	0	0	77° 45'	0.1	0.1	0	-0.1	-0.1	-0.2	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	77° 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	77° 15'	0.1	0.2	0.2	0.2	0.1	0	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	77° 0'	0.1	0.2	0.3	0.2	0.2	0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	76° 45'	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	76° 30'	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	76° 15'	0.1	0	0	0.1	0.1	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	76° 0'	0	0	0	0.1	0.1	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	75° 45'	0	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	75° 30'	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	75° 15'	0.1	0.1	0.2	0.2	0.2	0.1	0	-0.1	-0.1	
0	0	0	0	0	0.1	0.1	0	0	75° 0'	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	74° 45'	0.1	0	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	74° 30'	0.1	0.1	0	0	0	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	74° 15'	0.2	0.1	0	-0.1	-0.1	-0.1	0	0.1	0.2	
0	0	0	0	0	0	0	0	0	74° 0'	0.2	0.1	0	-0.1	-0.1	-0.1	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	73° 45'	0.2	0.1	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	73° 30'	0.1	0.1	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	73° 15'	0.1	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	73° 0'	0.1	0	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 45'	0.1	0	-0.1	-0.1	-0.1	0	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	72° 30'	0.1	0	0	-0.1	-0.1	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 15'	0.2	0.1	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 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	71° 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	71° 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	71° 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	0	0	0	71° 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	70° 45'	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	70° 30'	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	0	70° 15'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0	
0	0	0	0	0	0	0	0	0	70° 0'	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	80° 0'	0.3	0.3	0.3	0.2	0.1	0	-0.2	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	79° 45'	0.3	0.3	0.3	0.2	0.1	0	-0.1	-0.2	-0.3	
0	0	0	0	0	0.1	0	0	0	79° 30'	0.2	0.1	0.1	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	79° 15'	-0.1	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	79° 0'	-0.2	-0.2	-0.2	-0.2	-0.1	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	78° 45'	-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	0	78° 30'	0.1	0.1	0.1	0.1	0.1	0	-0.1	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	78° 15'	0.2	0.3	0.4	0.3	0.2	0.1	-0.1	-0.3	-0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	78° 0'	0.2	0.3	0.4	0.4	0.3	0.1	0	-0.2	-0.3	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	0	0.2	0.3	0.3	0.3	0.2	0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	77° 30'	-0.1	0	0.1	0.1	0.2	0.2	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	77° 15'	-0.2	-0.1	0	0	0.1	0.1	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	77° 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	76° 45'	0	0	0	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	76° 30'	0.1	0.1	0	0	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	76° 15'	0.2	0.1	0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	76° 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	0	75° 45'	0	0	0.1	0.1	0.2	0.2	0.2	0.1	0	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	75° 30'	-0.1	-0.1	0	0.1	0.2	0.2	0.2	0.1	0	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	75° 15'	-0.1	-0.1	-0.1	0	0.1	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0.1	0.1	75° 0'	0	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	74° 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	74° 30'	0.2	0.2	0.1	0	-0.1	-0.1	-0.1	0	0.1	
0	0	0	0	0	0	0	0	0	74° 15'	0.2	0.2	0.1	0	0	-0.1	0	0.1	0.2	
0	0	0	0	0	0	0	0	0	74° 0'	0.1	0.2	0.1	0.1	0	0	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	73° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	
0	0	0	0	0	0	0	0	0	73° 30'	0.1	0.1	0	0.1	0.1	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	73° 15'	0.1	0.1	0	0.1	0.1	0.1	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	73° 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	72° 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	72° 30'	0.1	0.1	0.1	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 15'	0.1	0.1	0	0	0	0	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	72° 0'	0.1	0	0	0	0	0	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	71° 45'	0.1	0	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	71° 30'	0.1	0.1	0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	71° 15'	0.1	0.1	0.1	0.1	0	0	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	71° 0'	0.1	0.1	0.1	0.1	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	70° 45'	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	70° 30'	0	0	0.1	0.1	0.1	0	0	-0.1	0	
0	0	0	0	0	0	0	0	0	70° 15'	0	0	0	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	70° 0'	0.1	0	0	0	0.1	0	0	0	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N
Longitude 156 to 160 °E

Correction to Latitude
Correction to Longitude

Correction to Latitude										Correction to Longitude									
156°	156°	157°	157°	158°	158°	159°	159°	160°	Longitude	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	80° 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	-0.1	-0.1	-0.1	-0.1	-0.1	0	79° 45'	-0.3	-0.3	-0.2	-0.2	-0.2	-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	79° 30'	-0.2	-0.2	-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	79° 15'	0	0	0	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	79° 0'	0.2	0.2	0.1	0	-0.1	-0.2	-0.4	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	78° 45'	0.3	0.2	0.2	0	-0.1	-0.2	-0.3	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	78° 30'	0.3	0.3	0.2	0	-0.1	-0.2	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	78° 15'	0.3	0.2	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	78° 0'	0.3	0.2	0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	77° 45'	0.2	0.2	0.1	0.1	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	77° 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	77° 15'	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	0	77° 0'	0	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	76° 45'	0	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0	
0	0	0	0	0	0	0	0	0	76° 30'	0	0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	
0	0	0	0	0	0	0	0	0	76° 15'	0	0	0.1	0.1	0.2	0.3	0.3	0.2	0.1	
0	0	0	0	0	0	0.1	0.1	0	76° 0'	0	0	0	0	0.1	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	75° 45'	0.1	0	0	-0.1	0	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	75° 30'	0.1	0	0	-0.1	-0.1	0	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	75° 15'	0.1	0	0	0	0	0	0	0.1	0.1	
0.1	0.1	0.1	0	0	0	0	0	0	75° 0'	0	0	0.1	0.1	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	74° 45'	-0.1	0	0.1	0.2	0.2	0.2	0.1	0	-0.1	
-0.1	0	0	0	0	0	0	0	0	74° 30'	-0.1	0	0.1	0.2	0.2	0.2	0.1	0	-0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	74° 15'	-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	0	0	0	74° 0'	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.1	0	
0	0	0	0	0	0	0	0	0	73° 45'	-0.1	-0.2	-0.4	-0.5	-0.5	-0.4	-0.3	-0.1	0	
0.1	0	0	0	0	0	0	0	0	73° 30'	0	-0.2	-0.3	-0.4	-0.4	-0.4	-0.2	-0.1	0	
0.1	0.1	0.1	0	0	0	0	0	0	73° 15'	0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.1	0	0.1	
0	0	0	0	0	0	0	0	0	73° 0'	0.1	0	-0.2	-0.2	-0.2	-0.1	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	72° 45'	0.1	0	-0.2	-0.2	-0.2	-0.1	0	0.1	0.2	
0	0	0	0	0	0	0	0	0	72° 30'	0	0	-0.1	-0.2	-0.2	-0.1	0	0.1	0.1	
0	0	0	0	0	0	-0.1	-0.1	0	72° 15'	0	0	0	0	0	0	0	0.1	0	
0	0	0	0	0	0	-0.1	-0.1	0	72° 0'	0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	71° 45'	0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	71° 30'	0	0	0	0	0.1	0.1	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	71° 15'	0	0	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	71° 0'	0	0.1	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	70° 45'	0	0.1	0.1	0.1	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	70° 30'	0	0.1	0.1	0.1	0.1	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	70° 15'	0	0	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	70° 0'	0	0.1	0.1	0.1	0.1	0.1	0	0	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N

Longitude 160 to 164 °E

Correction to Latitude

Correction to Longitude

Correction to Latitude										Correction to Longitude									
160° 0'	160° 30'	161° 0'	161° 30'	162° 0'	162° 30'	163° 0'	163° 30'	164° 0'	Longitude Latitude	160° 0'	160° 30'	161° 0'	161° 30'	162° 0'	162° 30'	163° 0'	163° 30'	164° 0'	
0	0	0	0	0	0	0	0	0	80° 0'	-0.2	-0.2	-0.1	0	0	0	0	0	0	
-0.1	-0.1	0	0	0	0	0	0	0	79° 45'	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	79° 30'	-0.4	-0.4	-0.4	-0.3	-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	79° 15'	-0.5	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	
0	0	0	0	0	0	-0.1	-0.1	-0.1	79° 0'	-0.5	-0.5	-0.5	-0.4	-0.3	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	78° 45'	-0.4	-0.4	-0.3	-0.2	-0.1	0	0.1	0.1	0.1	
0	0	0	0	0	-0.1	0	0	0	78° 30'	-0.3	-0.2	-0.2	-0.1	0	0.1	0.2	0.2	0.2	
0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	78° 15'	-0.1	-0.1	-0.1	0	0	0	0.1	0.1	0.2	
0	0	0	-0.1	-0.1	0	0	0	0	78° 0'	0	0	0	0	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	77° 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	77° 30'	0.1	0.1	0.1	0.1	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	77° 15'	0	0	0	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	77° 0'	0	-0.1	0	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	76° 45'	0	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	76° 30'	0.1	0	-0.1	-0.1	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	76° 15'	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0.1	0	0	0	0	0	0	0	0	76° 0'	0.2	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0.1	0.1	0.1	0	0	0	0	0	0	75° 45'	0.2	0.2	0.1	0	-0.1	-0.1	-0.1	0	0	
0	0	0.1	0	0	0	0	0	0	75° 30'	0.2	0.2	0.1	0	0	-0.1	0	0	0	
0	0	0	0.1	0.1	0.1	0	0	0	75° 15'	0.1	0.1	0.1	0	0	0	0	0.1	0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0	75° 0'	0	0	0	0	0	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	74° 45'	-0.1	-0.1	-0.2	-0.1	0	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	74° 30'	-0.1	-0.1	-0.2	-0.1	-0.1	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	74° 15'	-0.1	-0.1	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	74° 0'	0	0.1	0.1	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	73° 45'	0	0.1	0.1	0	0	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	73° 30'	0	0.1	0	0	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	73° 15'	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	73° 0'	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	72° 45'	0.2	0.2	0.1	0	0	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	72° 30'	0.1	0.1	0.1	0	0	0	0	0	0	
-0.1	0	0	0	0	0	0	-0.1	-0.1	72° 15'	0	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	-0.1	72° 0'	0	-0.1	-0.1	0	0.1	0.2	0.2	0.1	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	71° 45'	0	-0.1	-0.1	0	0.1	0.2	0.2	0.1	0	
0	0	0	0	0	0	0	0	0	71° 30'	0.1	0	0	0.1	0.1	0.2	0.2	0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 15'	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	71° 0'	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	70° 45'	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	70° 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	70° 15'	0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	70° 0'	0	0.1	0.1	0.1	0.1	0.1	0	0	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0	0	80° 0'	0	0	0.1	0.1	0.2	0.3	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	79° 45'	0	0	0.1	0.1	0.2	0.3	0.4	0.5	0.5	
0	0	0	0	0	0	0	0	0.1	79° 30'	-0.1	-0.1	-0.1	0	0.1	0.2	0.3	0.3	0.4	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	79° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	79° 0'	-0.1	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 45'	0.1	0	-0.1	-0.3	-0.4	-0.5	-0.6	-0.5	-0.4	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 30'	0.2	0.2	0.1	-0.1	-0.2	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	78° 15'	0.2	0.2	0.2	0.1	0	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	-0.1	78° 0'	0	0.1	0.2	0.2	0.2	0.1	0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	77° 45'	-0.1	0	0.1	0.2	0.2	0.2	0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	77° 30'	-0.1	-0.1	0	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	77° 15'	0	-0.1	-0.1	-0.1	0	0.1	0.1	0.2	0.1	
0	0	0	0	0	0	0	0	0	77° 0'	0	-0.1	-0.1	-0.1	0	0.1	0.2	0.3	0.2	
0	0	0	0	0	0	0	0	0	76° 45'	0	-0.1	-0.1	-0.1	-0.1	0.1	0.2	0.3	0.3	
0	0	0	0	0	0	0	0	0	76° 30'	0	-0.1	-0.1	-0.1	0	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	76° 15'	0	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	76° 0'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	75° 45'	0	0.1	0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	75° 30'	0	0	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	75° 15'	0.1	0	0	0	0	0	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	75° 0'	0.1	0.1	0	0	0	0	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	74° 45'	0.2	0.1	0.1	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	74° 30'	0.2	0.2	0.1	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	74° 15'	0.1	0.1	0.1	0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	74° 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	73° 45'	0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	73° 30'	0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	73° 15'	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	73° 0'	0	0	0	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	72° 45'	0	-0.1	0	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	72° 30'	0	-0.1	-0.1	0	0	0.1	0.1	0.1	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	72° 15'	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	0	0	0	72° 0'	0	-0.1	-0.1	-0.1	0	0	0	0	0	
-0.1	0	0	0	0	0	0	0	0	71° 45'	0	-0.1	-0.2	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	71° 30'	-0.1	-0.2	-0.2	-0.1	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	71° 15'	-0.1	-0.2	-0.2	-0.1	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	71° 0'	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	0	0	
0	0	0	-0.1	0	0	0	0	0	70° 45'	0	-0.1	-0.1	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	70° 30'	0	0	0	-0.1	-0.1	-0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	70° 15'	0	0	0	-0.1	-0.1	-0.1	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	70° 0'	0	0	0	-0.1	-0.1	-0.1	0	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0	0	0	0	0	0	0	0	80° 0'	0.4	0.4	0.3	0.2	0.1	0	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	79° 45'	0.5	0.4	0.3	0.2	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	79° 30'	0.4	0.4	0.3	0.2	0.1	0	-0.1	-0.2	-0.2	
0	0.1	0.1	0.1	0.1	0.1	0	0	0	79° 15'	0.1	0.2	0.2	0.3	0.2	0.2	0.1	0	0	
0	0	0	0	0	0	0	0	0	79° 0'	-0.2	0	0.1	0.2	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	78° 45'	-0.4	-0.2	0	0.2	0.3	0.4	0.3	0.2	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 30'	-0.4	-0.3	-0.1	0	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	78° 15'	-0.3	-0.3	-0.2	-0.1	0	0	0	0	-0.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	78° 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	77° 45'	-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	0	77° 30'	0	-0.1	-0.2	-0.2	-0.3	-0.2	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	77° 15'	0.1	0	-0.1	-0.2	-0.2	-0.3	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	77° 0'	0.2	0.2	0	-0.1	-0.2	-0.3	-0.3	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	76° 45'	0.3	0.2	0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	
0	0	0.1	0.1	0	0	0	0	0	76° 30'	0.2	0.2	0.1	0	-0.1	-0.1	-0.1	-0.1	0	
0	0.1	0.1	0.1	0	0	0	0	0	76° 15'	0.1	0.1	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	76° 0'	0	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	75° 45'	0	0	0	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	75° 30'	0.1	0.1	0.1	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	75° 15'	0.2	0.2	0.1	0	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	75° 0'	0.2	0.2	0.1	0	-0.1	-0.1	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	74° 45'	0.1	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	74° 30'	0.1	0.1	0	0	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	74° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	74° 0'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	73° 45'	0	-0.1	-0.1	0	0	0	0.1	0	0	
0	0	0	0	0	0	0	0	0	73° 30'	0	-0.1	-0.1	0	0	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	73° 15'	0	-0.1	-0.1	-0.1	0	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	73° 0'	0	-0.1	-0.1	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 45'	0	-0.1	-0.1	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 30'	0	0	0	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	72° 15'	0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	72° 0'	0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 45'	0	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	71° 30'	0	0	0	0	0	-0.1	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	71° 15'	0	0	0	0	0	0	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	71° 0'	0	0	0	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	70° 45'	0	0	0	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	70° 30'	0.1	0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	70° 15'	0.1	0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	70° 0'	0.1	0.1	0	0	-0.1	-0.1	-0.1	0	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 176 to 180 °E									
Correction to Latitude										Correction to Longitude									
176° 0'	176° 30'	177° 0'	177° 30'	178° 0'	178° 30'	179° 0'	179° 30'	180° 0'	Longitude Latitude	176° 0'	176° 30'	177° 0'	177° 30'	178° 0'	178° 30'	179° 0'	179° 30'	180° 0'	
0	0	0	0	0	0	0	0	0	80° 0'	0.7	0.6	0.6	0.5	0.4	0.3	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	79° 45'	0.7	0.6	0.5	0.4	0.3	0.2	0.2	0.1	0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	79° 30'	0.6	0.6	0.4	0.3	0.2	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	79° 15'	0.5	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	79° 0'	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	78° 45'	0.4	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	78° 30'	0.3	0.4	0.5	0.4	0.3	0.2	0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	78° 15'	0.3	0.5	0.5	0.5	0.4	0.2	0	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	78° 0'	0.3	0.4	0.5	0.5	0.4	0.2	0	-0.1	-0.3	
0	0	0	0	0	0	0	0	0	77° 45'	0.1	0.3	0.4	0.4	0.3	0.2	0.1	-0.1	-0.2	
0	0	0	0	0	0	0.1	0.1	0	77° 30'	0	0.2	0.2	0.3	0.2	0.2	0	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	77° 15'	0	0.1	0.1	0.2	0.1	0.1	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	77° 0'	-0.1	0	0	0.1	0.1	0	0	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0	76° 45'	-0.2	-0.1	-0.1	0	0	0	0	0.1	0.1	
0	0	0	0.1	0.1	0.1	0.1	0	0	76° 30'	-0.3	-0.2	-0.2	-0.1	-0.1	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	76° 15'	-0.3	-0.3	-0.2	-0.2	-0.1	0	0.1	0.2	0.3	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	76° 0'	-0.2	-0.2	-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	0	75° 45'	0	0	0	-0.1	-0.1	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	75° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	75° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	75° 0'	-0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	74° 45'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	74° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	74° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	74° 0'	0	0	0	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	73° 45'	0	-0.1	-0.1	-0.1	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	73° 30'	-0.1	-0.1	-0.1	0	0	0	0.1	0	0	
0	0	0	0	0	0	0	0	0	73° 15'	-0.1	-0.1	0	0	0	0.1	0	0	0	
0	0	0	0	0	0	0	0	0	73° 0'	0	0	0	0	0	0	0	0	0	
0	0	0	-0.1	0	0	0	0	0	72° 45'	0	0	0	0	0	0	0	0	0	
0	0	0	-0.1	0	0	0	0	0	72° 30'	0.1	0.1	0.1	0	0	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	72° 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	72° 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	71° 45'	0.1	0.1	0	0	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	71° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	71° 15'	0	0	0	-0.1	-0.1	0	0	0.1	0	
0	0	0	0	0	0	0	0	0	71° 0'	0	0	0	-0.1	-0.1	0	0	0.1	0	
0	0	0	0	0	0	0	0	0	70° 45'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	70° 30'	-0.1	0	0	0	0	0	0	0	0	
-0.1	-0.1	0	0	0	0	0	0	0	70° 15'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	70° 0'	-0.1	-0.1	-0.1	-0.1	0	0	0	0	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0	0	0	0	0	0	0	80° 0'	0.1	0.1	0	0	-0.1	-0.2	-0.3	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	79° 45'	0.1	0.1	0	0	-0.1	-0.2	-0.3	-0.3	-0.4	
0.1	0.1	0.1	0	0	0	0	0	0	79° 30'	0.1	0.1	0.1	0.1	0	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	79° 15'	0.1	0.2	0.2	0.2	0.1	0	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	79° 0'	0.2	0.2	0.2	0.2	0.2	0.1	0	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	78° 45'	0.1	0.1	0.1	0.2	0.1	0.1	0	-0.1	-0.2	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	78° 30'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	78° 15'	-0.2	-0.3	-0.2	-0.2	-0.1	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	78° 0'	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	0	0	0.1	
0	0	0	0	0	0	0	0	0	77° 45'	-0.2	-0.3	-0.3	-0.3	-0.2	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	77° 30'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	77° 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	77° 0'	-0.1	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	76° 45'	0.1	0.1	0.1	0	-0.1	-0.2	-0.3	-0.4	-0.4	
0	0	0	0	0	0	0	0.1	0.1	76° 30'	0.2	0.2	0.2	0.1	-0.1	-0.3	-0.4	-0.5	-0.5	
0	0	0	0	0	0	0.1	0.1	0.1	76° 15'	0.3	0.3	0.2	0	-0.2	-0.4	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	76° 0'	0.2	0.1	0	-0.1	-0.3	-0.5	-0.5	-0.5	-0.4	
0	0	0	0	0	0	0	0	0	75° 45'	0.1	0	-0.1	-0.2	-0.4	-0.5	-0.5	-0.4	-0.3	
0	0	0	0	0	0	-0.1	-0.1	-0.1	75° 30'	0	0	-0.1	-0.2	-0.3	-0.4	-0.3	-0.3	-0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	75° 15'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	-0.1	75° 0'	0	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	74° 45'	0	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	74° 30'	0	0	0	0	0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	74° 15'	0	0	0	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	74° 0'	0	0.1	0.1	0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	73° 45'	0.1	0.1	0.1	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	73° 30'	0	0	0	0	0	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	73° 15'	0	0	0	0	0	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	73° 0'	0	0	0	0	0	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	72° 45'	0	0	0	0	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	72° 30'	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	72° 15'	-0.1	0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	72° 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	0	0	71° 45'	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	71° 30'	0	-0.1	-0.2	-0.2	-0.3	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 15'	0	0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 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	70° 45'	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	70° 30'	0	0	0	0	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	70° 15'	0	0	0	0	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	70° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	80° 0'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	79° 45'	-0.4	-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	79° 30'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	79° 15'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	79° 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	78° 45'	-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	0	78° 30'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	78° 15'	0.1	0	0	0	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	78° 0'	0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0	0	0	0	77° 45'	0	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	77° 30'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	0	0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 0'	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1	0	0	0.1	
0	0	0.1	0.1	0	0	0	0	0	76° 45'	-0.4	-0.4	-0.3	-0.2	-0.2	-0.1	0	0	0.1	
0.1	0.1	0.1	0.1	0	0	0	0	0	76° 30'	-0.5	-0.4	-0.3	-0.2	-0.1	0	0	0	0	
0.1	0.1	0.1	0	0	0	0	0	0	76° 15'	-0.5	-0.3	-0.1	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	-0.1	-0.1	-0.1	76° 0'	-0.4	-0.2	0	0.2	0.2	0.2	0.2	0.1	0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	75° 45'	-0.3	-0.1	0.1	0.3	0.3	0.3	0.2	0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	75° 30'	-0.1	0	0.2	0.3	0.3	0.3	0.2	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	75° 15'	0	0.1	0.2	0.2	0.2	0.2	0.1	0	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	75° 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	74° 45'	0.1	0	0	0	0	0	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	74° 30'	0.1	0	0	0	0	0	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0.1	74° 15'	0	0	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	74° 0'	0	0	0	0	0	0	0	0	0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 45'	-0.1	-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	73° 30'	-0.2	-0.2	-0.1	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	73° 15'	-0.3	-0.2	-0.1	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	73° 0'	-0.2	-0.2	-0.1	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	72° 45'	-0.2	-0.2	-0.1	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	72° 30'	-0.2	-0.2	-0.1	0	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	72° 15'	-0.2	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 0'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	71° 45'	-0.1	-0.1	-0.1	0	0	0	0.1	0	0	
0	0	0	0	0	0	0	0	0	71° 30'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	71° 15'	-0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	71° 0'	-0.1	0	0	0	0	0	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	70° 45'	-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	70° 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	70° 15'	-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	70° 0'	-0.2	-0.1	0	0	0.1	0.1	0.1	0.1	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0	0	0	0	0	80° 0'	-0.1	-0.1	0	0	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	79° 45'	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	79° 30'	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	0	0	
0	0	0	0	0	0	0	0	0	79° 15'	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	0	0.1	
0	0	0	0	0	0	0	0	-0.1	79° 0'	-0.1	-0.1	-0.2	-0.1	-0.1	0	0	0.1	0.2	
0	0	0	0	0	0	0	-0.1	-0.1	78° 45'	-0.1	0	0	0	0.1	0.1	0.2	0.3	0.3	
0	0	0	0	0	0	0	0	0	78° 30'	0	0	0.1	0.1	0.2	0.3	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	78° 15'	0	0.1	0.2	0.2	0.3	0.3	0.4	0.3	0.3	
0	0	0	0	0	0	0	0	0	78° 0'	0	0.1	0.2	0.3	0.4	0.4	0.4	0.3	0.2	
0	0	0	0	0	0	0	0	0	77° 45'	0.1	0.2	0.3	0.4	0.4	0.4	0.3	0.2	0.2	
0	0	0	0	0	0	0	0	0	77° 30'	0.1	0.2	0.3	0.4	0.4	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	77° 15'	0.1	0.3	0.3	0.4	0.4	0.3	0.2	0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	77° 0'	0.1	0.2	0.3	0.4	0.4	0.3	0.2	0.2	0.1	
0	0	0.1	0.1	0.1	0.1	0.1	0	0	76° 45'	0.1	0.2	0.2	0.3	0.4	0.3	0.3	0.2	0.2	
0	0	0	0	0	0	0	0	0	76° 30'	0	0.1	0.2	0.3	0.3	0.4	0.3	0.3	0.2	
0	0	0	0	0	0	0	0	0	76° 15'	0	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.2	
-0.1	-0.1	0	0	0	0	0	0	0	76° 0'	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	0	0	0	0	75° 45'	0	0	0	0	0.1	0.1	0.1	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	75° 30'	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	-0.1	-0.1	0	75° 15'	0	-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	75° 0'	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	74° 45'	0.1	0.1	0.1	0.1	0	-0.1	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	74° 30'	0.2	0.2	0.2	0.2	0.1	0	-0.1	-0.3	-0.4	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	74° 15'	0.1	0.2	0.2	0.2	0.2	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	74° 0'	0.1	0.1	0.2	0.2	0.2	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	73° 45'	0	0.1	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	73° 30'	0	0.1	0.2	0.2	0.2	0.2	0.1	0	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	73° 15'	0	0	0.1	0.1	0.1	0.1	0	0	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	73° 0'	-0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 45'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 30'	-0.1	-0.1	0	0	0	0	0	0	0	
0	0	0	0	0	0	-0.1	-0.1	0	72° 15'	0	0	0	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	72° 0'	0	0	0	0	0.1	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 45'	0	0	0	0	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	71° 30'	0	0	0	0	0	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 15'	0	0	0	0	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 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	70° 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	70° 30'	0	0	0	0	0	0	0	0	-0.1	
0	0	0	0	0	0	0	0	0	70° 15'	0	0	0	-0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	70° 0'	0	0	-0.1	-0.1	-0.1	0	0	0.1	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 168 to 164 °W									
Correction to Latitude										Correction to Longitude									
168°	167°	167°	166°	166°	165°	165°	164°	164°	Longitude	168°	167°	167°	166°	166°	165°	165°	164°	164°	
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	80° 0'	0	-0.1	-0.2	-0.3	-0.4	-0.5	-0.5	-0.5	-0.4	
0	0	0	0	0	0	0	0	0	79° 45'	0	0	-0.1	-0.2	-0.3	-0.4	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	79° 30'	0	0	0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	79° 15'	0.1	0.1	0.1	0	0	-0.1	-0.2	-0.3	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 0'	0.2	0.2	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	78° 45'	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	78° 30'	0.3	0.3	0.2	0.1	0	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	78° 15'	0.3	0.2	0.1	0	-0.1	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	78° 0'	0.2	0.1	0.1	0	-0.1	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	77° 45'	0.2	0.1	0	0	0	-0.1	-0.1	-0.1	-0.2	
0	0.1	0.1	0.1	0	0	0	0	0	77° 30'	0.1	0	0	0	0	0.1	0	0	-0.1	
0.1	0.1	0	0	0	0	0	0.1	0.1	77° 15'	0	0	0	0	0.1	0.1	0.1	0	-0.1	
0	0	0	0	0	0	0	0.1	0.1	77° 0'	0.1	0	0	0.1	0.1	0	0	-0.1	-0.2	
0	0	0	0	0	0	0	0.1	0.1	76° 45'	0.2	0.1	0.1	0.1	0	-0.1	-0.2	-0.3	-0.5	
0	0	0	0	0	0	0	0	0.1	76° 30'	0.2	0.2	0.1	0.1	0	-0.1	-0.3	-0.5	-0.6	
0	0	0	0	0	0	0	0	0	76° 15'	0.2	0.1	0.1	0.1	0	-0.1	-0.3	-0.5	-0.6	
0	0	0	0	0.1	0.1	0.1	0.1	0	76° 0'	0.1	0	0	0	0	-0.1	-0.3	-0.4	-0.5	
0	0	0	0	0	0.1	0.1	0.1	0	75° 45'	0	0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	75° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	75° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	
-0.1	0	0	0	0	0	0	0	0	75° 0'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	
-0.1	0	0	0	0	0	0	0	0	74° 45'	-0.3	-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	74° 30'	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	74° 15'	-0.3	-0.4	-0.4	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	74° 0'	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0	0	0	0	0	0	73° 45'	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	0	0	0	
0.1	0.1	0.1	0.1	0	0	0	0	0	73° 30'	-0.1	-0.2	-0.2	-0.2	-0.1	0	0	0	0	
0.1	0.1	0.1	0	0	0	0	0	0	73° 15'	-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	
0.1	0.1	0	0	0	0	0	0	0	73° 0'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 45'	0	0	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 30'	0	0	0.1	0.1	0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 15'	-0.1	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 0'	-0.1	-0.1	-0.1	0	0	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	71° 45'	-0.1	-0.1	-0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	71° 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	71° 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	71° 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	70° 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	70° 30'	-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	70° 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	70° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 164 to 160 °W									
Correction to Latitude										Correction to Longitude									
164° 0'	163° 30'	163° 0'	162° 30'	162° 0'	161° 30'	161° 0'	160° 30'	160° 0'	Longitude	164° 0'	163° 30'	163° 0'	162° 30'	162° 0'	161° 30'	161° 0'	160° 30'	160° 0'	
									Latitude										
0	0	0	0	0	0	0	0	0	80° 0'	-0.4	-0.4	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	79° 45'	-0.5	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	79° 30'	-0.4	-0.4	-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	79° 15'	-0.3	-0.3	-0.2	-0.2	-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	79° 0'	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.3	-0.5	-0.6	
-0.1	-0.1	-0.1	0	0	0	0	0	0	78° 45'	-0.1	-0.2	-0.2	-0.2	-0.3	-0.4	-0.6	-0.7	-0.8	
0	0	0	0	0	0	0	0	0	78° 30'	-0.2	-0.3	-0.3	-0.3	-0.4	-0.5	-0.6	-0.8	-0.8	
0	0	0	0	0	0	0	0	0	78° 15'	-0.3	-0.4	-0.4	-0.4	-0.4	-0.5	-0.6	-0.6	-0.6	
0	0	0	0	0	0	0	0	0	78° 0'	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	77° 45'	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	77° 30'	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	77° 15'	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	77° 0'	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	76° 45'	-0.5	-0.6	-0.6	-0.5	-0.4	-0.2	-0.1	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	76° 30'	-0.6	-0.7	-0.7	-0.5	-0.4	-0.2	0	0.1	0.2	
0	0	0	0	0	0	0	0	0	76° 15'	-0.6	-0.7	-0.6	-0.5	-0.3	-0.1	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	76° 0'	-0.5	-0.5	-0.5	-0.4	-0.2	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	75° 45'	-0.4	-0.4	-0.3	-0.2	-0.1	0.1	0.1	0.1	0.1	
0	0	0	0	0	0	0	0	0	75° 30'	-0.3	-0.3	-0.2	-0.1	0	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0.1	0	75° 15'	-0.3	-0.3	-0.2	-0.1	0	0.1	0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	75° 0'	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	-0.1	-0.1	0	0	0	0	0	74° 45'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	74° 30'	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	74° 15'	-0.1	-0.1	-0.2	-0.2	-0.3	-0.4	-0.4	-0.5	-0.6	
0	0	0	0	0	0	0	0	0	74° 0'	-0.1	-0.1	-0.2	-0.2	-0.3	-0.4	-0.5	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	73° 45'	0	-0.1	-0.2	-0.3	-0.3	-0.4	-0.4	-0.5	-0.5	
0	0	0	0	0	0	0	0	0	73° 30'	0	-0.1	-0.1	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	
0	0	0	0	0	0	0	-0.1	0	73° 15'	0	0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	-0.1	0	73° 0'	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0	72° 45'	0	-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	72° 30'	0	0	0	0	0	0	0	0.1	0.1	
0	0	0	0	-0.1	0	0	0	0	72° 15'	0	0.1	0.1	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 0'	0.1	0.1	0.1	0.1	0	0	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 45'	0	0.1	0.1	0.1	0	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0.1	0.1	0	71° 30'	0	0.1	0.1	0	0	-0.1	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 15'	0	0	0	0	-0.1	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	71° 0'	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	70° 45'	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	
0	0	0	0	0	0	0	0	0	70° 30'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	70° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	70° 0'	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 156 to 152 °W									
Correction to Latitude										Correction to Longitude									
156°	155°	155°	154°	154°	153°	153°	152°	152°	Longitude	156°	155°	155°	154°	154°	153°	153°	152°	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	0.1	0.1	0.1	80° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	
0	0	0	0	0	0.1	0.1	0.1	0.1	79° 45'	-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	0.1	79° 30'	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	0	
0.1	0.1	0.1	0.1	0.1	0	0	0.1	0.1	79° 15'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	0	
0	0	0	0	0	0	0	0	0	79° 0'	-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	78° 45'	-0.1	0	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	78° 30'	0.1	0.1	0	-0.2	-0.4	-0.5	-0.6	-0.5	-0.4	
-0.1	-0.1	0	0	0	0	0	0	0	78° 15'	0.1	0	-0.1	-0.3	-0.5	-0.7	-0.7	-0.7	-0.5	
0	0	0	0	0	0	0	0	0	78° 0'	0	-0.1	-0.3	-0.4	-0.6	-0.7	-0.7	-0.6	-0.4	
0	0	0	0	0	0	0	0	0	77° 45'	-0.2	-0.2	-0.3	-0.4	-0.5	-0.6	-0.5	-0.4	-0.2	
0	0	0	0	0	0	0	0	0	77° 30'	-0.2	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	77° 15'	-0.1	-0.2	-0.2	-0.3	-0.4	-0.4	-0.3	-0.2	0	
0	0	0	0	0	0	0	0	0	77° 0'	-0.1	-0.1	-0.3	-0.4	-0.4	-0.4	-0.3	-0.1	0	
0	0	0	0	0	0	0	0	0	76° 45'	-0.1	-0.2	-0.3	-0.4	-0.5	-0.4	-0.3	-0.1	0	
0	0	0.1	0.1	0.1	0	0	0	0	76° 30'	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1	0.1	
0.1	0.1	0.1	0.1	0	0	0	0	0	76° 15'	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1	0	0.1	
0.1	0.1	0.1	0	0	0	0	0	0	76° 0'	-0.4	-0.4	-0.3	-0.2	-0.1	0	0.1	0.1	0	
0.1	0.1	0	0	0	0	0	0	0	75° 45'	-0.4	-0.3	-0.2	-0.1	0.1	0.1	0.2	0.1	0	
0.1	0.1	0.1	0	0	0	0	0	0	75° 30'	-0.4	-0.3	-0.1	0	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	75° 15'	-0.3	-0.2	-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	75° 0'	-0.2	-0.1	0	0.1	0.2	0.3	0.2	0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 45'	-0.1	0	0.1	0.2	0.2	0.3	0.2	0.1	0	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	74° 30'	-0.1	0	0.1	0.1	0.2	0.2	0.2	0.1	0	
0	0	0	0	0	0.1	0.1	0.1	0.1	74° 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	0.1	74° 0'	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	0	0.1	0.1	
0	0	0	0	0	0	0	0.1	0.1	73° 45'	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.1	0	0	
0	0	0	0	0	0	0	0	0	73° 30'	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	-0.1	0	
-0.1	0	0	0	0	0	0	0	0	73° 15'	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	73° 0'	-0.3	-0.3	-0.3	-0.4	-0.4	-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	72° 45'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 30'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	
0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	72° 15'	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	-0.3	-0.4	-0.4	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 0'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.3	-0.4	-0.5	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	71° 45'	-0.1	-0.1	0	0	0	-0.1	-0.2	-0.4	-0.5	
0	0	0	0	0	0	0	0	0	71° 30'	-0.1	-0.1	0	0	0	-0.1	-0.2	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	71° 15'	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	71° 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	70° 45'	0	0	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	70° 30'	0.1	0.1	0	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	70° 15'	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	70° 0'	0	0.1	0.1	0.1	0	0	0	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 152 to 148 °W									
Correction to Latitude										Correction to Longitude									
152°	151°	151°	150°	150°	149°	149°	148°	148°	Longitude	152°	151°	151°	150°	150°	149°	149°	148°	148°	
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	80° 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	0.1	0	0	79° 45'	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	0.1	0.1	79° 30'	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	0.1	0.1	0.1	79° 15'	0	0.1	0.2	0.2	0.2	0.1	0.1	0	0	-0.2
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 0'	-0.1	0	0.1	0.2	0.2	0.1	0	-0.1	-0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	78° 45'	-0.2	-0.1	0	0.1	0.1	0.1	0	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	78° 30'	-0.4	-0.3	-0.1	0.1	0.2	0.2	0.1	0	0	-0.2
0	0	0	0	0	0	0	0	0	78° 15'	-0.5	-0.3	-0.1	0.1	0.2	0.2	0.1	0	0	-0.2
0	0	0	0	0	0	0	0	0	78° 0'	-0.4	-0.2	0	0.1	0.2	0.2	0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	77° 45'	-0.2	-0.1	0.1	0.1	0.1	0	-0.1	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	77° 30'	-0.1	0	0.1	0.1	0	-0.1	-0.2	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	77° 15'	0	0.1	0.1	0.1	0	-0.2	-0.3	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	77° 0'	0	0.1	0.2	0.1	0	-0.2	-0.3	-0.4	-0.4	
0	0	0	0	0	0	0	0	0	76° 45'	0	0.1	0.2	0.1	0	-0.2	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	76° 30'	0.1	0.1	0.1	0	-0.1	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	76° 15'	0.1	0.1	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	76° 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	75° 45'	0	-0.1	-0.2	-0.2	-0.1	-0.1	0	0	0	-0.1
0	0	0	0	0	0	0	0	0	75° 30'	0	-0.1	-0.2	-0.2	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	75° 15'	0	-0.1	-0.2	-0.1	-0.1	0	0	0	0	
0.1	0.1	0	0	0	0	0	0	0	75° 0'	0	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	
0.1	0.1	0	0	0	0	0	0	0	74° 45'	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	0.1	0.1	0	74° 30'	0	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	0.1	74° 15'	0.1	0	0	0	0	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	74° 0'	0.1	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	73° 45'	0	0	0	-0.1	-0.1	0	0.1	0.2	0.3	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 30'	0	0	-0.1	-0.1	-0.1	0	0.1	0.2	0.3	
0	0	0	0	0	0	0	0	0.1	73° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	73° 0'	-0.1	-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	72° 45'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	72° 30'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	0	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	72° 15'	-0.4	-0.5	-0.4	-0.4	-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	72° 0'	-0.5	-0.6	-0.6	-0.4	-0.3	-0.1	-0.1	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	71° 45'	-0.5	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1	0	0	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	71° 30'	-0.4	-0.4	-0.4	-0.3	-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	-0.1	71° 15'	-0.2	-0.2	-0.2	-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	71° 0'	-0.1	-0.1	-0.1	-0.1	-0.2	-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	70° 45'	-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	-0.1	70° 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	-0.1	70° 15'	-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	70° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 148 to 144 °W									
Correction to Latitude										Correction to Longitude									
148°	147°	147°	146°	146°	145°	145°	144°	144°	Longitude	148°	147°	147°	146°	146°	145°	145°	144°	144°	
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	80° 0'	-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	0.1	0.1	79° 45'	-0.1	-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	79° 30'	-0.1	-0.2	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 15'	-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	0.1	0.1	0.1	0.1	79° 0'	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	-0.2	-0.3	-0.4	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	78° 30'	-0.2	-0.3	-0.4	-0.4	-0.3	-0.3	-0.2	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	78° 15'	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	78° 0'	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	77° 45'	-0.3	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	77° 30'	-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	77° 15'	-0.4	-0.3	-0.3	-0.2	-0.1	-0.1	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	77° 0'	-0.4	-0.3	-0.2	-0.2	-0.1	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	76° 45'	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	76° 30'	-0.3	-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	76° 15'	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	76° 0'	-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	75° 45'	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	75° 30'	0	-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	75° 15'	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	75° 0'	0.1	0	0	0	0	-0.1	-0.2	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	74° 45'	0.1	0.1	0.1	0.1	0	-0.1	-0.2	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	74° 30'	0.2	0.2	0.2	0.1	0	-0.1	-0.2	-0.4	-0.5	
0.1	0.1	0.1	0	0	0	0	0	0	74° 15'	0.2	0.2	0.2	0.2	0.1	-0.1	-0.2	-0.4	-0.4	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	74° 0'	0.3	0.3	0.3	0.2	0.1	-0.1	-0.2	-0.3	-0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 45'	0.3	0.4	0.4	0.3	0.2	0	-0.1	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 30'	0.3	0.4	0.4	0.3	0.2	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	73° 15'	0.2	0.3	0.3	0.2	0.1	0	0	-0.1	-0.2	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 0'	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	0.1	0.1	0.1	72° 45'	0	0	0.1	0.1	0.1	0.1	0.1	0	0	
0	0	0	0	0	0	0	0	0	72° 30'	0	0	0	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	72° 15'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 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	71° 45'	0	-0.1	0	0	0	0	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	71° 30'	-0.1	0	0	0	0	0	-0.1	-0.1	-0.2	
-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	71° 15'	0	0	0.1	0.2	0.2	0.1	0	-0.2	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	71° 0'	0	0.1	0.2	0.3	0.3	0.2	0.1	-0.1	-0.3	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	-0.1	70° 45'	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0	-0.1	
-0.1	-0.1	0	0	0	0	0.1	0.1	0	70° 30'	0	0	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	0	70° 15'	0	0	0	0	0	0	0	0.1	0.1	
-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	70° 0'	0	0	0	0	0	-0.1	-0.1	0	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 144 to 140 °W									
Correction to Latitude										Correction to Longitude									
144°	143°	143°	142°	142°	141°	141°	140°	140°	Longitude	144°	143°	143°	142°	142°	141°	141°	140°	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	0.1	0.1	0.1	0.1	0.1	80° 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	79° 45'	-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	0.1	0.1	0.1	0.1	0.1	79° 30'	-0.2	-0.2	-0.2	-0.2	-0.3	-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	79° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 0'	-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	0.1	78° 45'	-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	0.1	78° 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	78° 15'	-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	0	78° 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	77° 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	77° 30'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	77° 15'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	77° 0'	-0.3	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	76° 45'	-0.3	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	76° 30'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	76° 15'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	76° 0'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	75° 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	75° 30'	-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	75° 15'	-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	0	75° 0'	-0.4	-0.5	-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	74° 45'	-0.4	-0.5	-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	74° 30'	-0.5	-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	74° 15'	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	74° 0'	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	
0.1	0	0	0	0	0	0	0	0	73° 45'	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0	0	0	0	0	0	73° 30'	-0.3	-0.3	-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	0	73° 15'	-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	0	73° 0'	-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	0	72° 45'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 30'	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 15'	0	0.1	0.1	0.1	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	72° 0'	0	0.1	0.1	0.1	0.1	0	0	0	0	
-0.1	-0.1	-0.1	0	0	0	0	0	0	71° 45'	0	0	0	0.1	0	0	0	0	0	
-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0	0	0	71° 30'	-0.2	-0.2	-0.1	-0.1	0	0	0	0	0	
-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	71° 15'	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	-0.1	0	0	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	71° 0'	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	70° 45'	-0.1	-0.3	-0.4	-0.4	-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	70° 30'	0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	70° 15'	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	-0.1	-0.1	-0.1	-0.1	-0.1	70° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 140 to 136 °W									
Correction to Latitude										Correction to Longitude									
140°	139°	139°	138°	138°	137°	137°	136°	136°	Longitude	140°	139°	139°	138°	138°	137°	137°	136°	136°	
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	80° 0'	-0.2	-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	0.1	79° 45'	-0.2	-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	79° 30'	-0.2	-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	79° 15'	-0.2	-0.1	-0.1	-0.1	0	0	0	0	0	0
0.1	0	0	0	0	0	0.1	0.1	0.1	79° 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	0	0.1	0.1	0.1	0.1	0.1	78° 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	0.1	0.1	78° 30'	0	0	0	-0.1	-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	78° 15'	0	0	-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	78° 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	0	0	0	0	77° 45'	-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	0	77° 30'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	0
0	0	0	0	0	0	0	0	0	77° 15'	-0.2	-0.2	-0.3	-0.3	-0.2	-0.1	-0.1	0	0.1	0.1
0	0	0	0	0	0	0	0	0	77° 0'	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	0	0.1	0.1
0	0	0	0	0	0	0	0	0	76° 45'	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	0	0	0
0	0	0	0	0	0	0	0	0	76° 30'	-0.2	-0.2	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	0	0
0	0	0	0	0	0	0	0	0	76° 15'	-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	0	76° 0'	-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	0	0	75° 45'	-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	0	0	75° 30'	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	0	0
0	0	0	0	0	0	0	0	0	75° 15'	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	0	0
0	0	0	0	0	0	0	0	0	75° 0'	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
0	0	0	0	0	0	0	0	0	74° 45'	-0.2	-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	74° 30'	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
0	0	0	0	0	0	0	0	0	74° 15'	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
0	0	0	0	0	0	0	0	0	74° 0'	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
0	0	0	0	0	0	0	0	0	73° 45'	-0.2	-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	73° 30'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1
0	0	0	0	0	0	0	0	0	73° 15'	-0.1	-0.1	-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	73° 0'	0	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	-0.1	72° 45'	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	72° 30'	0	0	0.1	0.1	0	0	-0.1	-0.1	-0.1	-0.1
0	0	0	0	0	0	0	0	-0.1	72° 15'	0	0.1	0.1	0.1	0	0	0	-0.1	-0.1	-0.1
0	0	0	0	0	0	0	0	-0.1	72° 0'	0	0	0.1	0.1	0.1	0	0	0	0	0
0	0	0	0	0	0	-0.1	-0.1	-0.1	71° 45'	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	71° 30'	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	-0.1	-0.1	-0.1	-0.1	71° 15'	0	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	71° 0'	-0.1	0	0	0.1	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	70° 45'	-0.1	-0.1	0	0	0.1	0.2	0.2	0.3	0.3	0.3
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	70° 30'	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	0.2	0.2	0.2
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	70° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	0.1
-0.1	-0.1	0	0	0	0	0	0	0	70° 0'	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	0	0	0	0

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	-0.1	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.3	-0.3
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	79° 45'	0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.4	-0.3
0.1	0.1	0.1	0.1	0.1	0	0	0	0	79° 30'	0	0	0	-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	79° 15'	0	0	0	0	0	-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	79° 0'	-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	78° 45'	-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	0	78° 30'	-0.2	-0.1	-0.1	0	0	0.1	0.1	0.1	0.2
0.1	0	0	0	0	0	0	0	0	78° 15'	-0.1	-0.1	0	0	0.1	0.1	0.2	0.2	0.2
0	0	0	0	0	0	0	0	0	78° 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	77° 45'	0	0	0	0	0	0	0	0	0.1
0	0	0	0	0	0	0	0	0	77° 30'	0	0.1	0.1	0.1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	77° 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	77° 0'	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	76° 45'	0	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	76° 30'	0	0	0.1	0.2	0.3	0.4	0.4	0.4	0.3
0	0	0	0	0	0	0	0	0	76° 15'	0	0	0.1	0.2	0.3	0.4	0.5	0.4	0.4
0	0	0	0	0	0	0	0	0	76° 0'	0	0	0.1	0.2	0.3	0.4	0.5	0.5	0.4
0	0	0	0	0	0	0	0	0	75° 45'	0	0.1	0.1	0.2	0.3	0.4	0.4	0.4	0.4
0	0	0	0	0	0	0	0.1	0.1	75° 30'	0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5
0	0	0	0	0	0	0	0	0	75° 15'	0	0	0.1	0.1	0.2	0.3	0.3	0.4	0.6
0	0	0	0	0	0	0	0	0	75° 0'	-0.1	0	0.1	0.1	0.2	0.3	0.4	0.5	0.6
0	0	0	0	0	0	0	0	0	74° 45'	-0.1	-0.1	0	0.1	0.2	0.3	0.4	0.4	0.6
0	0	0	0	0	0	0	0	0.1	74° 30'	-0.2	-0.1	0	0.1	0.2	0.3	0.3	0.4	0.5
0	0	0	0	0	0	0	0	0	74° 15'	-0.2	-0.1	0	0.1	0.2	0.2	0.3	0.3	0.4
0	0	0	0	0	0	0	0	0	74° 0'	-0.2	-0.1	0	0.1	0.1	0.2	0.2	0.3	0.4
0	0	0	0	0	0	0	0	0	73° 45'	-0.1	-0.1	0	0	0.1	0.1	0.1	0.2	0.4
0	0	0	0	0	0	0	0	0	73° 30'	-0.1	0	0	0	0	0.1	0.1	0.2	0.3
0	0	0	0	0	0	-0.1	-0.1	-0.1	73° 15'	-0.1	0	0	0	0.1	0.1	0.1	0.2	0.3
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	73° 0'	-0.1	-0.1	0	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	72° 45'	-0.1	-0.1	0	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	72° 30'	-0.1	-0.1	0	0.1	0.2	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	72° 15'	-0.1	0	0	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	72° 0'	0	0	0	0.1	0.1	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	71° 45'	0.1	0	0	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	71° 30'	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	71° 15'	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0	-0.1
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0.1	71° 0'	0.2	0.2	0.2	0.2	0.1	0.1	0	-0.2	-0.3
-0.1	-0.1	-0.1	0	0	0	0.1	0.1	0.1	70° 45'	0.3	0.2	0.2	0.1	0	-0.1	-0.3	-0.4	-0.5
0	0	0	0	0.1	0.1	0.1	0.1	0.1	70° 30'	0.2	0.2	0.1	0	-0.1	-0.3	-0.4	-0.5	-0.4
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	70° 15'	0.1	0.1	0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.3
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	70° 0'	0	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	-0.3	-0.2	-0.1	-0.1	0	0.1	0.2	0.2	0.2	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	79° 45'	-0.3	-0.3	-0.2	-0.1	0	0.1	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	79° 30'	-0.3	-0.2	-0.2	-0.1	0	0	0.1	0.2	0.2	
0	0	0	0	0	0	0	0	0	79° 15'	-0.2	-0.2	-0.1	-0.1	0	0	0.1	0.1	0.1	
0.1	0	0	0	0	0	0	0	0	79° 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	78° 45'	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	78° 30'	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	78° 15'	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	
0	0	0	0	0	0	0	0	0	78° 0'	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	77° 45'	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.6	
0	0	0	0	0	0	0	0	0	77° 30'	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	
0	0	0	0	0	0	0	0	0	77° 15'	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.7	0.7	
0	0	0	0	0	0	0	0	0	77° 0'	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.6	
0	0	0	0	0	0	0	0	0.1	76° 45'	0.3	0.3	0.2	0.2	0.3	0.3	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0.1	76° 30'	0.3	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	76° 15'	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0	
0	0	0	0	0	0	0	0	0	76° 0'	0.4	0.3	0.2	0.2	0.1	0.1	0	0	-0.1	
0	0	0	0	0	0	-0.1	0	0	75° 45'	0.4	0.4	0.4	0.3	0.2	0.1	0	-0.1	-0.3	
0	0	0	0	0	-0.1	-0.1	0	0	75° 30'	0.5	0.5	0.6	0.5	0.4	0.2	0	-0.2	-0.4	
0	0	0	0	0	0	0	0	0	75° 15'	0.6	0.7	0.7	0.7	0.5	0.3	0	-0.3	-0.6	
0	0	0	0	0	0	0	0	0	75° 0'	0.6	0.7	0.8	0.8	0.6	0.4	0	-0.4	-0.7	
0	0	0	0	0	0	0	0	0	74° 45'	0.6	0.7	0.8	0.8	0.7	0.4	0	-0.4	-0.7	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	74° 30'	0.5	0.6	0.8	0.8	0.7	0.5	0.1	-0.3	-0.7	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 15'	0.4	0.6	0.7	0.8	0.7	0.5	0.1	-0.3	-0.6	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	74° 0'	0.4	0.6	0.7	0.7	0.6	0.4	0	-0.3	-0.6	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	73° 45'	0.4	0.5	0.6	0.6	0.5	0.2	-0.1	-0.4	-0.5	
0	0	0	0	0	0.1	0.1	0.1	0.1	73° 30'	0.3	0.5	0.5	0.5	0.3	0.1	-0.2	-0.4	-0.5	
-0.1	0	0	0	0	0	0.1	0.1	0.1	73° 15'	0.3	0.4	0.4	0.3	0.2	0	-0.2	-0.4	-0.5	
-0.1	-0.1	-0.1	0	0	0	0	0	0	73° 0'	0.2	0.3	0.3	0.2	0.1	-0.1	-0.3	-0.4	-0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	72° 45'	0.2	0.2	0.2	0.1	-0.1	-0.3	-0.4	-0.6	-0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	72° 30'	0.3	0.3	0.2	0	-0.2	-0.5	-0.6	-0.7	-0.6	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0.1	72° 15'	0.4	0.3	0.2	-0.1	-0.4	-0.7	-0.8	-0.8	-0.7	
-0.1	-0.1	0	0	0	0	0.1	0.1	0.1	72° 0'	0.4	0.3	0.1	-0.2	-0.5	-0.8	-0.9	-0.9	-0.6	
-0.1	-0.1	0	0	0.1	0.1	0.1	0	0	71° 45'	0.3	0.2	0	-0.3	-0.6	-0.9	-0.9	-0.8	-0.5	
-0.1	0	0	0.1	0.1	0.1	0.1	0	0	71° 30'	0.1	0	-0.3	-0.5	-0.7	-0.8	-0.8	-0.6	-0.4	
0	0	0.1	0.1	0.1	0.1	0	0	0	71° 15'	-0.1	-0.3	-0.5	-0.6	-0.7	-0.7	-0.6	-0.5	-0.4	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	71° 0'	-0.3	-0.5	-0.5	-0.6	-0.5	-0.5	-0.4	-0.3	-0.3	
0.1	0.1	0.1	0.1	0	0	0	0	0	70° 45'	-0.5	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0	0	0	0	0	0	70° 30'	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	
0.1	0	0	0	0	0	0	0	0	70° 15'	-0.3	-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	70° 0'	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 124 to 120 °W									
Correction to Latitude										Correction to Longitude									
124°	123°	123°	122°	122°	121°	121°	120°	120°	Longitude	124°	123°	123°	122°	122°	121°	121°	120°	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	80° 0'	0.1	0.1	0.3	0.4	0.5	0.6	0.7	0.7	0.8	
0.1	0.1	0.1	0	0	0	0	0	0	79° 45'	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.8	
0.1	0	0	0	0	0	0	0	0	79° 30'	0.1	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.8	
0	0	0	0	0	0	0	0	0	79° 15'	0.2	0.3	0.5	0.6	0.6	0.7	0.7	0.7	0.7	
0	0	0	0	0	0	0	0	0	79° 0'	0.3	0.4	0.5	0.6	0.6	0.6	0.5	0.5	0.5	
0	0	0	0	0	0	0	0	0	78° 45'	0.3	0.4	0.5	0.5	0.5	0.4	0.4	0.3	0.3	
0	0	0	0	0	0	0	0.1	0	78° 30'	0.3	0.4	0.4	0.4	0.3	0.2	0.1	0.1	0.1	
-0.1	-0.1	0	0	0	0	0	0.1	0	78° 15'	0.2	0.2	0.2	0.1	0	0	-0.1	-0.1	0	
-0.1	0	0	0	0	0	0.1	0.1	0	78° 0'	0.1	0	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0	77° 45'	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	77° 30'	-0.3	-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	0.1	0.1	0	77° 15'	-0.5	-0.4	-0.4	-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	77° 0'	-0.5	-0.4	-0.3	-0.2	-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	76° 45'	-0.4	-0.2	-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	76° 30'	-0.2	-0.1	0	0.1	0	0	-0.1	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	76° 15'	-0.1	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	0.1	0.1	0	76° 0'	-0.1	0	0.1	0.1	0	-0.1	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0	75° 45'	-0.2	-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	75° 30'	-0.4	-0.3	-0.2	-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	75° 15'	-0.4	-0.3	-0.2	-0.1	-0.1	0	0	0	0	
0	0	0	0	0	0	0	0	0	75° 0'	-0.4	-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	74° 45'	-0.2	-0.2	-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	0	0	74° 30'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.4	-0.3	
0	0	-0.1	-0.1	-0.1	0	0	0	0	74° 15'	-0.1	0	-0.1	-0.1	-0.2	-0.3	-0.4	-0.4	-0.3	
0	0	0	0	0	0	-0.1	-0.1	0	74° 0'	0	0	-0.1	-0.1	-0.2	-0.3	-0.4	-0.4	-0.3	
0	0	0	0	0	0	-0.1	-0.1	0	73° 45'	0	0	0	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	
0	0	0	0	0	0	0	-0.1	0	73° 30'	0	0.1	0.1	0	0	-0.1	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	73° 15'	0.1	0.1	0.1	0.1	0	-0.1	-0.2	-0.3	-0.3	
0	0	0	0	0	0	0	0	0	73° 0'	0.2	0.2	0.2	0.1	0	-0.1	-0.2	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	72° 45'	0.3	0.3	0.2	0.1	0	-0.1	-0.3	-0.3	-0.4	
0	0	0	0	0	0	0	0	0	72° 30'	0.3	0.2	0.2	0.1	-0.1	-0.2	-0.3	-0.4	-0.4	
0	0	0	0	0.1	0.1	0.1	0.1	0	72° 15'	0.2	0.1	0.1	0	-0.1	-0.2	-0.3	-0.4	-0.4	
0	0	0	0.1	0.1	0.1	0.1	0.1	0	72° 0'	0.1	0.1	0	0	-0.2	-0.3	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	71° 45'	0.1	0.1	0	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	71° 30'	0.1	0	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	
0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0	71° 15'	0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	71° 0'	-0.1	-0.2	-0.2	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	
0	0.1	0.1	0.1	0.1	0	0	0	0	70° 45'	-0.3	-0.3	-0.3	-0.2	-0.1	0	0	-0.1	-0.1	
0	0	0	0	0	0	0	0	0	70° 30'	-0.3	-0.3	-0.3	-0.2	0	0	0	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	70° 15'	-0.3	-0.3	-0.2	-0.1	0	-0.1	-0.2	-0.3	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	70° 0'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.3	-0.4	-0.4	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N

Longitude 120 to 116 °W

Correction to Latitude

Correction to Longitude

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°	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	0	0	0	0	0	80° 0'	0.8	0.8	0.8	0.7	0.7	0.7	0.8	0.8	0.8	80° 0'
0	0	0	0	0	0	0	0	0	79° 45'	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	79° 45'
0	0	0	0	0	0	0	0	0.1	79° 30'	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.6	79° 30'
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	79° 15'	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.3	79° 15'
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 0'	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.1	79° 0'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.1	78° 45'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 30'	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0	78° 30'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 15'	0	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0	78° 15'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 0'	-0.1	0	0.1	0.2	0.3	0.3	0.2	0.1	0	78° 0'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	-0.1	0	0.1	0.2	0.2	0.2	0.1	0	-0.1	77° 45'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 30'	-0.1	0	0.1	0.1	0.1	0	0	-0.1	-0.2	77° 30'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 15'	-0.1	0	0	0	0	-0.1	-0.2	-0.2	-0.3	77° 15'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 0'	0	0	0	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	77° 0'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	76° 45'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	76° 45'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	76° 30'	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	76° 30'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	76° 15'	-0.2	-0.2	-0.1	-0.1	0	0	0	-0.1	-0.1	76° 15'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	76° 0'	-0.2	-0.2	-0.1	0	0	0.1	0.1	0.1	0.1	76° 0'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 45'	-0.1	-0.1	0	0	0.1	0.2	0.2	0.2	0.2	75° 45'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 30'	-0.1	0	0	0.1	0.2	0.2	0.2	0.2	0.2	75° 30'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 15'	0	0	0	0.1	0.2	0.2	0.2	0.2	0.1	75° 15'
0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	75° 0'	-0.1	-0.1	-0.1	0	0.1	0.1	0.1	0.1	0	75° 0'
0	0	0	0.1	0.1	0.1	0.1	0.1	0.2	74° 45'	-0.3	-0.2	-0.2	-0.1	0	0	0	0	-0.1	74° 45'
0	0	0	0	0	0	0	0.1	0.1	74° 30'	-0.3	-0.3	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	74° 30'
0	0	-0.1	-0.1	-0.1	0	0	0	0	74° 15'	-0.3	-0.3	-0.2	-0.1	-0.2	-0.2	-0.3	-0.4	-0.4	74° 15'
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	74° 0'	-0.3	-0.2	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5	-0.5	74° 0'
-0.1	-0.1	-0.1	0	0	0	0	0	0	73° 45'	-0.3	-0.2	-0.2	-0.2	-0.2	-0.3	-0.4	-0.5	-0.5	73° 45'
-0.1	0	0	0	0	0	0	0	0	73° 30'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.5	-0.5	73° 30'
0	0	0	0	0	0	0	0	0	73° 15'	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	73° 15'
0	0	0	0	0	0	0	0	0	73° 0'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	73° 0'
0	0	0	0	0	0	0	0	0	72° 45'	-0.4	-0.5	-0.4	-0.4	-0.3	-0.3	-0.2	-0.3	-0.3	72° 45'
0	0	0	0	0	0	0	0	0	72° 30'	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.3	-0.4	72° 30'
0.1	0.1	0.1	0	0	0	0	0	0.1	72° 15'	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	72° 15'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	72° 0'	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	72° 0'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	71° 45'	-0.3	-0.3	-0.3	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	71° 45'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	71° 30'	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	71° 30'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	71° 15'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	71° 15'
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	71° 0'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	71° 0'
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	70° 45'	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	70° 45'
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	70° 30'	-0.2	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	70° 30'
0	0	0	0	0	0	0	0	0	70° 15'	-0.3	-0.4	-0.3	-0.2	-0.1	-0.1	-0.1	0	0	70° 15'
0	0	0	0	0	0	0	0	0	70° 0'	-0.4	-0.4	-0.3	-0.2	-0.1	-0.1	0	0	0	70° 0'

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0	0	0	0	0	0	0	0.1	0.1	80° 0'	0.8	0.9	0.8	0.8	0.7	0.6	0.4	0.2	0
0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.2	79° 45'	0.8	0.7	0.6	0.5	0.3	0.1	-0.1	-0.3	-0.4
0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	79° 30'	0.6	0.4	0.3	0.1	-0.1	-0.3	-0.4	-0.6	-0.6
0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	79° 15'	0.3	0.2	0	-0.2	-0.3	-0.4	-0.5	-0.6	-0.6
0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	79° 0'	0.1	0	-0.1	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	0.1	-0.1	-0.2	-0.3	-0.3	-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	78° 30'	0	-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	78° 15'	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	0.1	0.1	0.1	0.1	0.1	0.1	78° 0'	0	-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	0.1	0.1	77° 45'	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2
0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	77° 30'	-0.2	-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	0.1	0.1	0.1	0.1	0.1	77° 15'	-0.3	-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	0.1	0.1	77° 0'	-0.3	-0.3	-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	0.1	76° 45'	-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	0	76° 30'	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
0	0	0	0	0	0	0	0	0	0	76° 15'	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3
0.1	0	0	0	0	0	0	0	0	0	76° 0'	0.1	0.1	0.1	0	-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	0	75° 45'	0.2	0.2	0.1	0	-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	0.1	75° 30'	0.2	0.2	0.1	0	-0.1	-0.2	-0.3	-0.3	-0.3
0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	75° 15'	0.1	0.1	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	75° 0'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2
0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	74° 45'	-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	0.1	0.1	74° 30'	-0.2	-0.1	0	0	0.1	0.1	0	-0.1	-0.2
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 15'	-0.4	-0.3	-0.1	0	0.1	0	-0.1	-0.2	-0.2
0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	74° 0'	-0.5	-0.4	-0.3	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2
0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	73° 45'	-0.5	-0.4	-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	0.1	73° 30'	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
0	0	0	0	0	0	0	0.1	0.1	0.1	73° 15'	-0.4	-0.4	-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	73° 0'	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
0	0	0	0	0	0	0	0	0	0	72° 45'	-0.3	-0.4	-0.4	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4
0	0	0	0	0	0	0	0	0	0	72° 30'	-0.4	-0.4	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4
0.1	0.1	0	0	0	0	0	0	0	0	72° 15'	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
0.1	0.1	0	0	0	0	0	0	0	0	72° 0'	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4
0.1	0	0	0	0	0	0	0	0	0	71° 45'	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.3	-0.4	-0.4
0.1	0	0	0	0	0	0	0	0	0	71° 30'	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5
0	0	0	0	0	0	0	0	0	0	71° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.4	-0.5
0	0	0	0	0	0	0	0	0	0	71° 0'	-0.1	-0.1	-0.1	0	0	-0.1	-0.2	-0.4	-0.5
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	70° 45'	-0.1	-0.1	-0.1	0	0	-0.1	-0.2	-0.3	-0.5
0.1	0	0	0	0	0	0.1	0.1	0.1	0.1	70° 30'	-0.1	-0.1	0	0	0	-0.1	-0.2	-0.3	-0.5
0	0	0	0	0	0	0	0	0	0	70° 15'	0	0	0	0	-0.1	-0.1	-0.2	-0.3	-0.4
0	0	0	0	0	0	0	0	0	0	70° 0'	0	0	0	-0.1	-0.2	-0.2	-0.2	-0.3	-0.4

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 112 to 108 °W									
Correction to Latitude										Correction to Longitude									
112°	111°	111°	110°	110°	109°	109°	108°	108°	Longitude	112°	111°	111°	110°	110°	109°	109°	108°	108°	
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	0.2	0.2	0.2	0.2	0.2	0.2	80° 0'	0	-0.2	-0.3	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	79° 45'	-0.4	-0.5	-0.6	-0.6	-0.6	-0.5	-0.5	-0.4	-0.3	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	79° 30'	-0.6	-0.7	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1	
0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 15'	-0.6	-0.5	-0.5	-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	0.1	79° 0'	-0.3	-0.3	-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	0.1	78° 45'	-0.2	-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	78° 30'	-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	78° 15'	-0.1	-0.2	-0.2	-0.3	-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	0.1	78° 0'	-0.2	-0.2	-0.3	-0.4	-0.4	-0.3	-0.2	-0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	-0.2	-0.2	-0.3	-0.4	-0.3	-0.3	-0.2	0	0.1	
0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	77° 30'	-0.2	-0.2	-0.3	-0.3	-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	77° 15'	-0.1	-0.2	-0.2	-0.2	-0.1	0	0	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 0'	-0.1	-0.1	-0.1	-0.1	0	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	76° 45'	-0.1	-0.1	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	76° 30'	-0.2	-0.1	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	76° 15'	-0.3	-0.2	-0.1	0	0.1	0.1	0.1	0.1	0	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	76° 0'	-0.4	-0.4	-0.2	-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	75° 45'	-0.4	-0.4	-0.3	-0.2	-0.1	0	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 30'	-0.3	-0.3	-0.3	-0.3	-0.2	-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	75° 15'	-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	0.1	0.1	0.1	0.1	0.1	75° 0'	-0.2	-0.2	-0.2	-0.2	-0.3	-0.2	-0.2	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 45'	-0.2	-0.2	-0.3	-0.3	-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	74° 30'	-0.2	-0.3	-0.3	-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	74° 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	0.1	0.1	0.1	0.1	0.1	0.1	74° 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	0.1	0.1	0.1	0.1	0.1	73° 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	0.1	0.1	0.1	0.1	0.1	0.1	73° 30'	-0.3	-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	73° 15'	-0.3	-0.3	-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	0	73° 0'	-0.4	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	0	0.1	
0	0	0	0	0	0	0	0	0	72° 45'	-0.4	-0.3	-0.3	-0.2	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0	0.1	72° 30'	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	0	0	0	
0	0	0	0	0	0	0	0.1	0.1	72° 15'	-0.4	-0.3	-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	72° 0'	-0.4	-0.3	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.1	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	71° 45'	-0.4	-0.4	-0.3	-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	71° 30'	-0.5	-0.5	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	71° 15'	-0.5	-0.6	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1	-0.1	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	71° 0'	-0.5	-0.6	-0.7	-0.6	-0.5	-0.3	-0.2	-0.1	0	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	70° 45'	-0.5	-0.6	-0.7	-0.7	-0.5	-0.4	-0.2	-0.1	0	
0.1	0.1	0	0	0.1	0.1	0.1	0.1	0.1	70° 30'	-0.5	-0.6	-0.7	-0.7	-0.6	-0.4	-0.3	-0.2	-0.1	
0	0	0	0	0	0.1	0.1	0.1	0.1	70° 15'	-0.4	-0.6	-0.6	-0.7	-0.6	-0.5	-0.4	-0.2	-0.1	
0	0	0	0	0	0	0.1	0.1	0.1	70° 0'	-0.4	-0.5	-0.6	-0.7	-0.6	-0.6	-0.4	-0.3	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'
0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	80° 0'	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.3	-0.2
0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	79° 45'	-0.3	-0.3	-0.2	-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	79° 30'	-0.1	-0.1	0	0.1	0.2	0.2	0.3	0.3	0.3
0.1	0.1	0.1	0.1	0.1	0	0	0	0	79° 15'	0	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 0'	0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.5
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	0	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.4
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	78° 30'	0	0.1	0.1	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	78° 15'	0	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 0'	0	0.1	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	77° 45'	0.1	0.2	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	77° 30'	0.2	0.3	0.3	0.3	0.2	0.1	0	0	0
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 15'	0.3	0.3	0.3	0.3	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	77° 0'	0.2	0.3	0.3	0.3	0.3	0.2	0	-0.1	-0.1
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	76° 45'	0.1	0.2	0.2	0.2	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	0.1	76° 30'	0	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	76° 15'	0	0	0	0	0.1	0.2	0.2	0.3	0.3
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	76° 0'	0	0	-0.1	-0.1	0	0.1	0.2	0.2	0.3
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 45'	0	0	-0.1	0	0	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	75° 30'	0	0	0	0	0	0	0.1	0.1	0.2
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 15'	-0.1	-0.1	0	0	0	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	75° 0'	-0.1	0	0	0	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	74° 45'	-0.1	0	0	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	74° 30'	-0.1	0	0	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	74° 15'	-0.1	0	0	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	74° 0'	-0.1	0	0	0	0	0	0.1	0.1	0.2
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 45'	-0.1	0	0.1	0.1	0	0	-0.1	0	0
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 30'	0	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	73° 15'	0	0.1	0.1	0.1	0	-0.1	-0.2	-0.1	0
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 0'	0.1	0.1	0.1	0	-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	72° 45'	0	0	0	-0.1	-0.2	-0.2	-0.2	-0.1	0.1
0.1	0.1	0.1	0.1	0	0	0	0.1	0.1	72° 30'	0	0	0	-0.1	-0.2	-0.2	-0.3	-0.2	0
0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	72° 15'	-0.1	0	0	0	-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	72° 0'	-0.1	0	0.1	0.1	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	71° 45'	-0.1	-0.1	0	0	0	-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	71° 30'	-0.1	-0.1	0	0	-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	71° 15'	-0.1	0	0	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	71° 0'	0	0	0	0	0	-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	70° 45'	0	0	0	0	0	0	-0.1	-0.1	-0.2
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	70° 30'	-0.1	0	0	0	0	-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	70° 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	0.1	70° 0'	-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 104 to 100 °W									
Correction to Latitude										Correction to Longitude									
104°	103°	103°	102°	102°	101°	101°	100°	100°	Longitude	104°	103°	103°	102°	102°	101°	101°	100°	100°	
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	80° 0'	-0.2	0	0.2	0.4	0.5	0.7	0.7	0.8	0.7	
0.1	0	0	0	0	0	0	0.1	0.1	79° 45'	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.8	
0	0	0	0	0	0	0	0	0.1	79° 30'	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	
0	0	0	0	0	0	0	0.1	0.1	79° 15'	0.5	0.4	0.3	0.2	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	79° 0'	0.5	0.4	0.2	0.1	-0.1	-0.2	-0.3	-0.2	-0.1	
0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	78° 45'	0.4	0.3	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.1	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	78° 30'	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	0.1	0.1	78° 15'	0	0	0	-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	78° 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	0.1	77° 45'	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	77° 30'	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	0.1	0.1	77° 15'	-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	0	77° 0'	-0.1	-0.2	-0.1	-0.1	0	0.1	0.2	0.2	0.2	
0.1	0.1	0	0	0	0	0	0	0	76° 45'	0	-0.1	-0.1	0	0.1	0.2	0.2	0.3	0.3	
0.1	0.1	0.1	0	0	0	0	0	0	76° 30'	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	76° 15'	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	76° 0'	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	0.1	0.1	0.1	0.1	0.1	75° 45'	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 30'	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 15'	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 0'	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 45'	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 30'	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 15'	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 0'	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 45'	0	0.1	0.2	0.3	0.3	0.3	0.4	0.4	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 30'	0	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 15'	0	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 0'	0.1	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	72° 45'	0.1	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	72° 30'	0	0.2	0.3	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	72° 15'	-0.1	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	72° 0'	-0.2	0	0.1	0.3	0.3	0.3	0.4	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	71° 45'	-0.2	-0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	71° 30'	-0.2	-0.1	0	0.1	0.2	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	71° 15'	-0.2	-0.1	0	0.1	0.2	0.2	0.2	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	71° 0'	-0.2	-0.1	-0.1	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	0.1	70° 45'	-0.2	-0.2	-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	70° 30'	-0.2	-0.1	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	0.1	0.1	70° 15'	-0.1	-0.1	0	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	70° 0'	-0.1	0	0.1	0.1	0.2	0.1	0.1	0	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
0.1	0.1	0	0	0	0	0	0	0	80° 0'	0.7	0.7	0.7	0.7	0.7	0.7	0.8	1	1.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 45'	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	79° 30'	0.5	0.6	0.7	0.7	0.8	0.8	0.7	0.6	0.6	
0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	79° 15'	0.1	0.3	0.4	0.5	0.6	0.6	0.6	0.5	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	79° 0'	-0.1	0	0.2	0.3	0.4	0.4	0.4	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 45'	-0.1	0.1	0.2	0.3	0.4	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	78° 30'	0.1	0.2	0.3	0.4	0.5	0.4	0.3	0.2	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	78° 15'	0.2	0.3	0.4	0.6	0.6	0.6	0.5	0.4	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 0'	0.1	0.2	0.4	0.5	0.7	0.8	0.8	0.7	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	-0.1	0	0.2	0.4	0.6	0.8	0.9	0.9	0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 30'	-0.1	0	0.1	0.3	0.5	0.7	0.9	0.9	0.8	
0.1	0	0	0	0	0	0	0	0	77° 15'	0.1	0.1	0.1	0.3	0.5	0.7	0.8	0.8	0.7	
0	0	0	0	0	0	0	0	0	77° 0'	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.6	
0	0	0	0	0	0	0	0	0	76° 45'	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.5	
0	0	0	0	0	0	0.1	0.1	0.1	76° 30'	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	76° 15'	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	76° 0'	0.3	0.3	0.3	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	75° 45'	0.4	0.4	0.4	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	75° 30'	0.4	0.5	0.5	0.4	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	75° 15'	0.5	0.5	0.5	0.4	0.3	0.3	0.2	0.2	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 0'	0.5	0.5	0.4	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	74° 45'	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 30'	0.4	0.4	0.3	0.2	0.1	0.1	0.2	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 15'	0.4	0.4	0.3	0.2	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	74° 0'	0.4	0.4	0.3	0.2	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	73° 45'	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.2	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 30'	0.5	0.5	0.4	0.2	0.1	0.1	0.1	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 15'	0.5	0.5	0.4	0.2	0.1	0.1	0.1	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 0'	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	72° 45'	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.2	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	72° 30'	0.4	0.4	0.3	0.2	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	72° 15'	0.4	0.4	0.3	0.2	0.1	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	72° 0'	0.4	0.4	0.3	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	71° 45'	0.4	0.4	0.3	0.2	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	71° 30'	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	71° 15'	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	71° 0'	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.4	
0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	70° 45'	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	
0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	70° 30'	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	70° 15'	0	0	0	0	0.1	0.1	0.2	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	70° 0'	0	0	0	0	0	0.1	0.1	0.2	0.2	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 96 to 92 °W									
Correction to Latitude										Correction to Longitude									
96°	95°	95°	94°	94°	93°	93°	92°	92°	Longitude	96°	95°	95°	94°	94°	93°	93°	92°	92°	
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	80° 0'	1.1	1.3	1.4	1.5	1.5	1.4	1.2	0.9	0.6	
0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	79° 45'	0.8	0.9	0.9	1	1	0.9	0.9	0.7	0.5	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	79° 30'	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	79° 15'	0.4	0.3	0.3	0.4	0.5	0.6	0.8	0.8	0.8	
0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	79° 0'	0.3	0.3	0.3	0.5	0.7	0.9	1.1	1.1	1.1	
0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	78° 45'	0.2	0.2	0.3	0.5	0.7	1	1.1	1.2	1.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	78° 30'	0.1	0.1	0.1	0.2	0.4	0.6	0.8	0.9	0.8	
0	0	0	0	0.1	0.1	0.1	0.2	0.2	78° 15'	0.2	0.1	0	0	0	0.1	0.2	0.3	0.3	
0.1	0	0	0	0	0.1	0.1	0.1	0.1	78° 0'	0.5	0.3	0	-0.2	-0.3	-0.3	-0.2	-0.2	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	0.7	0.5	0.2	-0.1	-0.3	-0.4	-0.4	-0.3	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	77° 30'	0.8	0.6	0.3	0	-0.3	-0.4	-0.4	-0.3	-0.1	
0	0.1	0.1	0.1	0	0	0	0	0	77° 15'	0.7	0.5	0.3	0	-0.2	-0.3	-0.2	-0.1	0	
0	0	0	0	0	0	0	0	0	77° 0'	0.6	0.4	0.2	0	-0.1	-0.1	-0.1	0	0.2	
0	0	0	0	0	0	0	0	0	76° 45'	0.5	0.4	0.3	0.1	0	0	0	0.1	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	76° 30'	0.4	0.4	0.3	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	0.1	0	76° 15'	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	76° 0'	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 45'	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 30'	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 15'	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	0.1	0.1	0.1	0.1	0.1	75° 0'	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 45'	0.3	0.4	0.3	0.2	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	74° 30'	0.3	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 15'	0.3	0.3	0.3	0.2	0.1	0	0.1	0.1	0.2	
0.1	0.1	0.1	0.1	0	0	0	0	0	74° 0'	0.3	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	
0.1	0.1	0	0	0	0	0	0	0	73° 45'	0.4	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0	
0.1	0.1	0	0	0	0	0	0	0.1	73° 30'	0.4	0.5	0.5	0.4	0.3	0.2	0.1	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 15'	0.4	0.5	0.5	0.4	0.2	0.1	0	0	0	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	73° 0'	0.4	0.5	0.4	0.3	0.2	0	0	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	72° 45'	0.4	0.4	0.4	0.3	0.1	0	-0.1	-0.1	-0.1	
0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	72° 30'	0.3	0.4	0.4	0.2	0.1	-0.1	-0.2	-0.2	-0.2	
0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	72° 15'	0.3	0.3	0.3	0.2	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	72° 0'	0.2	0.3	0.2	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	0.1	0.1	71° 45'	0.3	0.3	0.2	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	71° 30'	0.3	0.4	0.3	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	71° 15'	0.4	0.4	0.3	0.1	-0.1	-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	71° 0'	0.4	0.4	0.3	0.1	-0.1	-0.3	-0.4	-0.3	-0.1	
0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	70° 45'	0.4	0.4	0.3	0.2	-0.1	-0.3	-0.3	-0.3	-0.2	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	70° 30'	0.4	0.4	0.3	0.2	0	-0.2	-0.3	-0.3	-0.2	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	70° 15'	0.3	0.3	0.3	0.2	0.1	-0.1	-0.1	-0.2	-0.2	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	70° 0'	0.2	0.2	0.2	0.2	0.1	0.1	0	-0.1	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	0.6	0.2	-0.2	-0.5	-0.8	-1	-1.1	-1.1	-1	
0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	79° 45'	0.5	0.3	0.1	-0.2	-0.4	-0.6	-0.7	-0.8	-0.8	
0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	79° 30'	0.6	0.5	0.3	0.1	-0.1	-0.3	-0.4	-0.5	-0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 15'	0.8	0.7	0.6	0.3	0	-0.2	-0.4	-0.5	-0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 0'	1.1	0.9	0.6	0.3	-0.1	-0.4	-0.6	-0.7	-0.6	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	78° 45'	1.1	0.9	0.6	0.2	-0.2	-0.5	-0.7	-0.7	-0.6	
0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	78° 30'	0.8	0.7	0.4	0.1	-0.2	-0.4	-0.4	-0.3	-0.1	
0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	78° 15'	0.3	0.3	0.2	0.1	0	0	0.1	0.3	0.5	
0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	78° 0'	0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	77° 45'	-0.2	0	0.2	0.3	0.4	0.6	0.7	0.8	1	
0	0	0	0	0	0	0	0	0	77° 30'	-0.1	0.1	0.3	0.4	0.5	0.6	0.7	0.8	1	
0	0	0	0	0	0	0	-0.1	-0.1	77° 15'	0	0.2	0.4	0.5	0.6	0.7	0.7	0.9	1	
0	0	0	-0.1	-0.1	0	0	0	0	77° 0'	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.9	1	
0	0	0	0	0	0	0	0	0	76° 45'	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.9	
0	0	0	0	0	0	0.1	0.1	0.1	76° 30'	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	
0	0	0	0	0	0.1	0.1	0.1	0.1	76° 15'	0.4	0.3	0.3	0.2	0.2	0.1	0.2	0.2	0.2	
0.1	0.1	0	0	0	0	0	0	0.1	76° 0'	0.5	0.4	0.3	0.2	0.1	0	0	0	0.1	
0.1	0.1	0.1	0.1	0	0	0	0	0	75° 45'	0.5	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.1	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	75° 30'	0.5	0.5	0.5	0.4	0.4	0.3	0.2	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	75° 15'	0.5	0.5	0.6	0.5	0.5	0.4	0.4	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	75° 0'	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.5	
0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	74° 45'	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.5	
0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	74° 30'	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.3	0.5	
0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	74° 15'	0.2	0.2	0.1	0.1	0	0	0.1	0.2	0.4	
0	0	0.1	0.1	0.1	0.1	0.1	0	0	74° 0'	0.1	0.1	0	0	0	0	0.2	0.3	0.3	
0	0	0	0	0	0	0	0	0	73° 45'	0	0	-0.1	0	0	0.1	0.3	0.3	0.3	
0.1	0.1	0.1	0.1	0	0	0	0	0	73° 30'	0	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	0.1	0.1	0.1	73° 15'	0	0	0	0	0.1	0.2	0.3	0.3	0.2	
0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	73° 0'	-0.1	0	0	0	0.1	0.2	0.2	0.2	0.1	
0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	72° 45'	-0.1	-0.1	0	0.1	0.2	0.2	0.2	0.2	0.1	
0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	72° 30'	-0.2	-0.1	0	0.1	0.2	0.3	0.3	0.2	0.1	
0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	72° 15'	-0.2	-0.1	0.1	0.2	0.3	0.4	0.4	0.3	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	72° 0'	-0.1	0	0.2	0.3	0.4	0.5	0.5	0.4	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	71° 45'	0	0.1	0.2	0.3	0.3	0.4	0.4	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	71° 30'	0	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	
0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	71° 15'	-0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	71° 0'	-0.1	0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	
0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	70° 45'	-0.2	-0.1	0	0.1	0.1	0.1	0.2	0.2	0.2	
0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	70° 30'	-0.2	-0.1	-0.1	0	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	70° 15'	-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	0.1	0.1	0.1	0.1	70° 0'	-0.1	-0.1	-0.1	0	0	0	0	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	-1	-0.8	-0.6	-0.4	-0.1	0.2	0.5	0.8	1.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 45'	-0.8	-0.7	-0.6	-0.4	-0.2	0.1	0.4	0.6	0.9	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 30'	-0.5	-0.5	-0.4	-0.3	-0.1	0.1	0.4	0.6	0.8	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 15'	-0.5	-0.5	-0.3	-0.1	0.1	0.3	0.5	0.7	0.8	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	79° 0'	-0.6	-0.5	-0.2	0	0.3	0.5	0.7	0.9	1	
0.2	0.2	0.1	0.1	0.1	0	0	0	0	78° 45'	-0.6	-0.3	0	0.3	0.6	0.8	0.9	1	1.1	
0.2	0.1	0.1	0	0	0	0	0	0	78° 30'	-0.1	0.2	0.5	0.8	1	1.1	1.1	1.1	1.1	
0.1	0.1	0	0	0	0	0	0	0	78° 15'	0.5	0.8	1	1.1	1.2	1.2	1.1	1	0.9	
0.1	0	0	0	0	0	0	0	0	78° 0'	0.9	1	1.2	1.2	1.2	1.1	1	0.9	0.8	
0	0	0	0	0	0	0	0	0	77° 45'	1	1.1	1.1	1.1	1.1	1	0.9	0.8	0.7	
0	0	0	0	0	0	0	0	0	77° 30'	1	1.1	1.1	1.1	1	0.9	0.8	0.7	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	77° 15'	1	1.1	1.2	1.1	1	0.9	0.7	0.5	0.3	
0	0	0	0	0	0	0	0	0.1	77° 0'	1	1.1	1.2	1.1	0.9	0.7	0.5	0.2	0.1	
0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	76° 45'	0.9	0.9	1	0.9	0.7	0.5	0.3	0.1	0	
0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	76° 30'	0.5	0.6	0.6	0.6	0.5	0.3	0.2	0.1	0.1	
0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	76° 15'	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	76° 0'	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	75° 45'	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.7	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	75° 30'	0.3	0.3	0.4	0.5	0.6	0.8	0.8	0.9	0.9	
0	0	0	0	0	0	0	0	0	75° 15'	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	75° 0'	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.8	
0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	74° 45'	0.5	0.6	0.7	0.7	0.6	0.5	0.5	0.5	0.6	
0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	74° 30'	0.5	0.6	0.7	0.6	0.6	0.5	0.4	0.4	0.4	
0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	74° 15'	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3	
0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	74° 0'	0.3	0.3	0.3	0.2	0.2	0.3	0.4	0.5	0.4	
0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	73° 45'	0.3	0.1	0	-0.1	0	0.2	0.4	0.6	0.6	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 30'	0.2	0	-0.2	-0.2	-0.1	0.1	0.4	0.7	0.8	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 15'	0.2	0	-0.2	-0.2	-0.1	0.2	0.5	0.7	0.9	
0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	73° 0'	0.1	0	-0.1	-0.1	0	0.3	0.6	0.8	0.9	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	72° 45'	0.1	0	0	0	0.2	0.4	0.6	0.7	0.8	
0.1	0.1	0	0	0	0	0	0.1	0.1	72° 30'	0.1	0.1	0	0.1	0.2	0.4	0.5	0.6	0.7	
0	0	0	0	0	0	0	0.1	0.1	72° 15'	0.2	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	72° 0'	0.3	0.2	0.1	0.1	0.1	0.2	0.3	0.4	0.4	
0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	71° 45'	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.4	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	71° 30'	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.3	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	71° 15'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	71° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	70° 45'	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	70° 30'	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	
0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	70° 15'	0.1	0.2	0.2	0.3	0.4	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	70° 0'	0.1	0.2	0.2	0.3	0.4	0.4	0.3	0.2	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	80° 0'	1.1	1.3	1.5	1.7	1.7	1.7	1.6	1.3	1.1	
0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0	79° 45'	0.9	1.1	1.3	1.4	1.4	1.4	1.2	0.9	0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	79° 30'	0.8	0.9	1.1	1.1	1.1	1	0.8	0.6	0.3	
0.1	0.1	0	0	0	0	0	0	0	79° 15'	0.8	0.9	1	1	1	0.9	0.7	0.5	0.2	
0	0	0	0	0	0	0	-0.1	0	79° 0'	1	1.1	1.1	1.2	1.2	1.1	0.9	0.7	0.4	
0	0	0	0	0	0	0	0	0	78° 45'	1.1	1.1	1.2	1.2	1.3	1.2	1.1	0.9	0.6	
0	0	0	0	0	0	0	0	0	78° 30'	1.1	1	1.1	1.1	1.1	1.1	1.1	0.9	0.7	
0	0	0	0	0	0	0.1	0.1	0	78° 15'	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.7	0.5	
0	0	0	0	0	0.1	0.1	0.1	0	78° 0'	0.8	0.7	0.7	0.8	0.8	0.7	0.6	0.5	0.3	
0	0	0	0	0.1	0.1	0.1	0.1	0	77° 45'	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0.4	0.2	
0	0	0	0	0	0.1	0.1	0.1	0	77° 30'	0.6	0.5	0.6	0.6	0.6	0.6	0.5	0.4	0.2	
0	0	0	0	0	0	0	0	0	77° 15'	0.3	0.3	0.3	0.4	0.5	0.5	0.5	0.4	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	77° 0'	0.1	0.1	0.2	0.3	0.5	0.6	0.6	0.6	0.4	
0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0	76° 45'	0	0.1	0.2	0.4	0.6	0.7	0.8	0.8	0.6	
0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	76° 30'	0.1	0.2	0.4	0.6	0.8	0.9	0.9	0.9	0.8	
0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0	76° 15'	0.3	0.4	0.5	0.6	0.7	0.8	0.8	0.8	0.8	
0	-0.1	-0.1	-0.1	0	0	0	0.1	0	76° 0'	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.6	0.7	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	75° 45'	0.7	0.6	0.5	0.3	0.1	0	0	0.1	0.4	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	0	75° 30'	0.9	0.8	0.6	0.3	0	-0.2	-0.3	-0.3	-0.1	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	0	75° 15'	0.9	0.9	0.7	0.5	0.1	-0.2	-0.5	-0.6	-0.5	
0.2	0.2	0.2	0.2	0.2	0.1	0.1	0	0	75° 0'	0.8	0.8	0.8	0.7	0.4	0.1	-0.3	-0.5	-0.5	
0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.2	0	74° 45'	0.6	0.7	0.8	0.8	0.7	0.4	0.2	-0.1	-0.2	
0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0	74° 30'	0.4	0.5	0.6	0.7	0.7	0.7	0.5	0.4	0.2	
0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0	74° 15'	0.3	0.4	0.4	0.5	0.5	0.6	0.7	0.6	0.6	
0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0	74° 0'	0.4	0.4	0.3	0.3	0.3	0.4	0.6	0.7	0.8	
0.1	0.1	0	0	0	0	0	0	0	73° 45'	0.6	0.5	0.4	0.2	0.2	0.3	0.6	0.8	1	
0.1	0	0	0	0	0	0	0	0	73° 30'	0.8	0.7	0.5	0.3	0.2	0.3	0.6	0.8	1	
0.1	0.1	0	0	0	0	0.1	0.1	0	73° 15'	0.9	0.8	0.6	0.4	0.3	0.3	0.5	0.8	1	
0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0	73° 0'	0.9	0.8	0.6	0.3	0.2	0.2	0.3	0.5	0.8	
0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0	72° 45'	0.8	0.7	0.5	0.2	0	-0.1	0	0.2	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	72° 30'	0.7	0.6	0.4	0.2	0	-0.1	-0.1	0.1	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	72° 15'	0.5	0.5	0.4	0.2	0.1	0	0	0.1	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	72° 0'	0.4	0.4	0.4	0.3	0.2	0.2	0.2	0.3	0.4	
0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0	71° 45'	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.5	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	71° 30'	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.5	0.5	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	71° 15'	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.5	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	71° 0'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	70° 45'	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	70° 30'	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	
0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0	70° 15'	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0	70° 0'	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 80 to 76 °W									
Correction to Latitude										Correction to Longitude									
80° 0'	79° 30'	79° 0'	78° 30'	78° 0'	77° 30'	77° 0'	76° 30'	76° 0'	Longitude Latitude	80° 0'	79° 30'	79° 0'	78° 30'	78° 0'	77° 30'	77° 0'	76° 30'	76° 0'	
0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	80° 0'	1.1	0.7	0.4	0	-0.3	-0.5	-0.7	-0.9	-1	
0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	79° 45'	0.6	0.3	0	-0.3	-0.5	-0.7	-0.8	-0.9	-0.9	
0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	79° 30'	0.3	0	-0.3	-0.5	-0.6	-0.7	-0.7	-0.7	-0.6	
0	0	0	0	0	0	0	0	0	79° 15'	0.2	-0.1	-0.3	-0.6	-0.7	-0.7	-0.7	-0.7	-0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 0'	0.4	0.1	-0.2	-0.5	-0.7	-0.9	-0.9	-0.9	-0.8	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 45'	0.6	0.3	-0.1	-0.4	-0.7	-0.9	-1	-1	-1	
0	0	0	0	0	0	0	0	0	78° 30'	0.7	0.4	0	-0.3	-0.6	-0.8	-0.9	-0.9	-0.8	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 15'	0.5	0.2	0	-0.3	-0.5	-0.6	-0.6	-0.6	-0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 0'	0.3	0.1	-0.2	-0.3	-0.4	-0.5	-0.5	-0.4	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	0.2	-0.1	-0.2	-0.4	-0.4	-0.4	-0.4	-0.2	-0.1	
0	0	0	0	0	0	0	0	0	77° 30'	0.2	0	-0.2	-0.3	-0.4	-0.3	-0.3	-0.2	0	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	77° 15'	0.3	0.1	-0.1	-0.2	-0.2	-0.2	-0.1	0	0	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	77° 0'	0.4	0.3	0.1	0	-0.1	0	0	0.1	0.1	
0.1	0	0	0	0	0	-0.1	-0.1	-0.1	76° 45'	0.6	0.4	0.3	0.2	0.1	0.1	0.2	0.2	0.3	
0.2	0.1	0.1	0.1	0.1	0	0	0	0	76° 30'	0.8	0.6	0.5	0.4	0.3	0.3	0.4	0.4	0.4	
0.2	0.2	0.2	0.1	0.1	0.1	0	0	0	76° 15'	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.6	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	76° 0'	0.7	0.8	0.9	1	1	0.9	0.8	0.8	0.7	
0	0	0	0.1	0	0	0	0	-0.1	75° 45'	0.4	0.6	0.9	1.1	1.2	1.1	1	0.9	0.8	
-0.1	0	0	0	0	0	0	0	0	75° 30'	-0.1	0.2	0.6	1	1.2	1.3	1.2	1	0.9	
-0.1	0	0	0	0	0	0	0	0	75° 15'	-0.5	-0.2	0.3	0.7	1.1	1.3	1.3	1.2	1	
0	0	0	0	0	0	0	0	0	75° 0'	-0.5	-0.3	0	0.5	1	1.3	1.4	1.3	1.1	
0.2	0.1	0.1	0.1	0	0	0.1	0.1	0.1	74° 45'	-0.2	-0.2	0.1	0.5	0.9	1.2	1.3	1.2	1	
0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	74° 30'	0.2	0.3	0.4	0.6	0.9	1.2	1.3	1.2	1	
0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	74° 15'	0.6	0.6	0.7	0.8	1	1.1	1.2	1.2	1	
0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	74° 0'	0.8	0.9	0.9	0.9	1	1	1.1	1.2	1.1	
0	0	0	0	0	0	0	0.1	0.1	73° 45'	1	1	1	0.9	0.8	0.8	0.9	1	1.1	
0	0	0	-0.1	0	0	0	0.1	0.1	73° 30'	1	1.1	1	0.8	0.6	0.5	0.5	0.7	0.8	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	73° 15'	1	1.1	1	0.8	0.5	0.3	0.3	0.4	0.6	
0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	73° 0'	0.8	1	1	0.9	0.6	0.4	0.3	0.4	0.6	
0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	72° 45'	0.5	0.8	0.9	1	0.8	0.7	0.6	0.5	0.6	
0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	72° 30'	0.3	0.6	0.9	1	1	0.9	0.8	0.7	0.6	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	72° 15'	0.3	0.6	0.8	0.9	1	0.9	0.8	0.7	0.5	
0	0	0	0	0.1	0.1	0.1	0.1	0.1	72° 0'	0.4	0.6	0.7	0.7	0.8	0.8	0.7	0.6	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	71° 45'	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.4	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	71° 30'	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.4	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	71° 15'	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	71° 0'	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.6	0.6	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	70° 45'	0.4	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.7	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	70° 30'	0.3	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.8	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	70° 15'	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.7	0.7	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	70° 0'	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.7	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 76 to 72 °W									
Correction to Latitude										Correction to Longitude									
76°	75°	75°	74°	74°	73°	73°	72°	72°	Longitude	76°	75°	75°	74°	74°	73°	73°	72°	72°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	80° 0'	-1	-1.1	-1.2	-1.3	-1.4	-1.4	-1.4	-1.4	-1.3	
0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	79° 45'	-0.9	-0.9	-1	-1	-1	-1	-1	-0.9	-0.7	
0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	79° 30'	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.3	
0	0	0.1	0.1	0	0	0	0	0	79° 15'	-0.6	-0.5	-0.5	-0.4	-0.4	-0.4	-0.3	-0.2	0	
-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	79° 0'	-0.8	-0.7	-0.6	-0.5	-0.3	-0.2	0	0.2	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	78° 45'	-1	-0.8	-0.6	-0.4	-0.2	0.1	0.4	0.6	0.9	
0	0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	78° 30'	-0.8	-0.6	-0.4	-0.1	0.2	0.5	0.8	1	1.2	
0.1	0	0	0	0	0	-0.1	-0.1	-0.1	78° 15'	-0.5	-0.3	0	0.2	0.5	0.8	1	1.2	1.4	
0.1	0.1	0.1	0	0	0	0	0	0	78° 0'	-0.2	0	0.2	0.4	0.6	0.8	1	1.2	1.3	
0.1	0	0	0	0	0	0.1	0.1	0.1	77° 45'	-0.1	0.1	0.2	0.4	0.6	0.8	0.9	1	1.1	
0	0	0	0	0	0	0	0	0	77° 30'	0	0.1	0.2	0.4	0.5	0.6	0.8	0.9	1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	77° 15'	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 0'	0.1	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	76° 45'	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.3	0.4	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	76° 30'	0.4	0.4	0.3	0.2	0.1	0	0	0.1	0.3	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	76° 15'	0.6	0.5	0.5	0.4	0.3	0.2	0.1	0.1	0.2	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	76° 0'	0.7	0.6	0.6	0.5	0.5	0.4	0.3	0.2	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	75° 45'	0.8	0.7	0.7	0.7	0.6	0.5	0.4	0.3	0.1	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	75° 30'	0.9	0.8	0.7	0.7	0.7	0.6	0.5	0.3	0.2	
0	0	0	0	0	0	0	0	0	75° 15'	1	0.8	0.7	0.7	0.6	0.6	0.5	0.4	0.2	
0	0	0	0	0	0.1	0.1	0.1	0	75° 0'	1.1	0.8	0.7	0.6	0.5	0.5	0.5	0.4	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 45'	1	0.8	0.6	0.4	0.4	0.5	0.5	0.5	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 30'	1	0.7	0.5	0.4	0.4	0.4	0.5	0.5	0.4	
0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 15'	1	0.8	0.6	0.5	0.4	0.4	0.5	0.5	0.4	
0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 0'	1.1	1	0.9	0.7	0.5	0.4	0.4	0.4	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	73° 45'	1.1	1.1	1	0.8	0.6	0.4	0.3	0.3	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	73° 30'	0.8	1	1	0.9	0.8	0.5	0.3	0.2	0.2	
0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0	73° 15'	0.6	0.9	1	1.1	0.9	0.7	0.5	0.3	0.2	
0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	73° 0'	0.6	0.8	1	1.1	1.1	0.9	0.6	0.4	0.2	
0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	72° 45'	0.6	0.8	1	1.1	1.1	1	0.7	0.5	0.3	
0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.2	72° 30'	0.6	0.6	0.7	0.8	0.9	0.9	0.8	0.7	0.5	
0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	72° 15'	0.5	0.4	0.4	0.5	0.6	0.8	0.8	0.9	0.8	
0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	72° 0'	0.4	0.2	0.2	0.2	0.4	0.6	0.8	0.9	0.9	
0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	71° 45'	0.4	0.2	0.1	0.2	0.3	0.5	0.7	0.8	0.7	
0.1	0.1	0.1	0.1	0	0	0	0.1	0.1	71° 30'	0.4	0.3	0.2	0.3	0.4	0.5	0.6	0.6	0.5	
0.1	0.1	0.1	0	0	0	0	0	0.1	71° 15'	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.3	0.2	
0.1	0.1	0.1	0	0	0	0	0	0	71° 0'	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.3	0.1	
0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	70° 45'	0.7	0.7	0.7	0.6	0.6	0.5	0.4	0.3	0.2	
0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	70° 30'	0.8	0.8	0.8	0.7	0.6	0.5	0.4	0.3	0.4	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	70° 15'	0.7	0.8	0.8	0.8	0.6	0.5	0.4	0.4	0.5	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	70° 0'	0.7	0.8	0.8	0.8	0.7	0.6	0.5	0.5	0.5	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 72 to 68 °W									
Correction to Latitude										Correction to Longitude									
72°	71°	71°	70°	70°	69°	69°	68°	68°	Longitude	72°	71°	71°	70°	70°	69°	69°	68°	68°	
0'	30'	0'	30'	0'	30'	0'	30'	0'	Latitude	0'	30'	0'	30'	0'	30'	0'	30'	0'	
0.3	0.2	0.2	0.1	0.1	0.1	0	0	0	80° 0'	-1.3	-1.1	-0.8	-0.5	-0.2	0.1	0.4	0.6	0.8	
0.1	0.1	0.1	0	0	0	0	-0.1	-0.1	79° 45'	-0.7	-0.5	-0.2	0	0.3	0.5	0.7	0.8	0.9	
0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1	79° 30'	-0.3	-0.1	0.2	0.4	0.7	0.9	1	1.1	1.1	
0	0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	79° 15'	0	0.3	0.5	0.8	1	1.2	1.3	1.3	1.3	
-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	79° 0'	0.4	0.7	0.9	1.1	1.3	1.4	1.4	1.4	1.4	
-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	78° 45'	0.9	1.1	1.3	1.4	1.4	1.4	1.4	1.3	1.2	
-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	78° 30'	1.2	1.4	1.4	1.5	1.4	1.3	1.2	1	0.9	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 15'	1.4	1.4	1.4	1.4	1.3	1.1	1	0.9	0.8	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	78° 0'	1.3	1.3	1.3	1.2	1.1	1	0.9	0.9	0.8	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	1.1	1.2	1.2	1.1	1.1	1	0.9	0.9	0.9	
0	0	0	0.1	0.1	0.1	0.1	0.1	0	77° 30'	1	1	1	1	1	0.9	0.9	0.9	0.9	
0	0	0	0	0	0	0	0	0	77° 15'	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	
-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1	77° 0'	0.6	0.8	0.9	0.9	1	1	1	0.9	0.9	
-0.1	0	0	0	0	0	0	0	0	76° 45'	0.4	0.6	0.8	1	1	1	1	1	0.9	
-0.1	-0.1	-0.1	0	0	0	0	0	0	76° 30'	0.3	0.5	0.7	0.9	1	1	0.9	0.8	0.7	
-0.1	-0.1	-0.1	-0.1	0	0	0	0.1	0.1	76° 15'	0.2	0.3	0.5	0.6	0.7	0.7	0.7	0.6	0.5	
-0.2	-0.2	-0.1	-0.1	-0.1	0	0	0	0	76° 0'	0.1	0.1	0.2	0.3	0.3	0.4	0.3	0.3	0.2	
-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	75° 45'	0.1	0	0	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	-0.2	-0.2	75° 30'	0.2	0.1	0	0.1	0.1	0.2	0.2	0.1	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	75° 15'	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.1	
0	0	0	0	0	0	0	0	0.1	75° 0'	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	74° 45'	0.4	0.3	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	0.1	0.1	0.1	74° 30'	0.4	0.3	0.2	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	74° 15'	0.4	0.3	0.2	0.1	0	0	0	0	0.1	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	74° 0'	0.3	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	0.1	0.1	0.1	0.1	73° 45'	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 30'	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	73° 15'	0.2	0.2	0.2	0.2	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	73° 0'	0.2	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	0.1	0.1	0.1	72° 45'	0.3	0.2	0.1	0.1	0	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	72° 30'	0.5	0.4	0.2	0.1	0	0	0.1	0.2	0.3	
0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	72° 15'	0.8	0.6	0.4	0.3	0.1	0.1	0.1	0.2	0.3	
0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0	72° 0'	0.9	0.7	0.6	0.4	0.3	0.3	0.2	0.2	0.2	
0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	71° 45'	0.7	0.6	0.6	0.5	0.5	0.6	0.5	0.4	0.3	
0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.1	71° 30'	0.5	0.4	0.4	0.5	0.6	0.8	0.8	0.7	0.6	
0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	71° 15'	0.2	0.1	0.1	0.3	0.5	0.8	0.9	0.9	0.7	
0	0	0	0	0	0.1	0.1	0.2	0.2	71° 0'	0.1	0.1	0.1	0.2	0.4	0.5	0.7	0.7	0.7	
0.1	0	0	0	0	0	0	0.1	0.1	70° 45'	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.5	
0.1	0.1	0	0	0	0	0	0.1	0.1	70° 30'	0.4	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.3	
0.1	0.1	0.1	0.1	0.1	0	0	0.1	0.1	70° 15'	0.5	0.5	0.5	0.4	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	70° 0'	0.5	0.5	0.5	0.4	0.3	0.2	0.1	0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0	0	0	0	0	0	80° 0'	0.8	1	1.1	1.2	1.2	1.3	1.3	1.4	1.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 45'	0.9	1	1	1	1	1.1	1.2	1.3	1.5	
-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	79° 30'	1.1	1	1	1	1.1	1.1	1.2	1.4	1.5	
-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	79° 15'	1.3	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.4	
-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	79° 0'	1.4	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	78° 45'	1.2	1.1	1.1	1	1	1	1.1	1.1	1	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	78° 30'	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 15'	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	
0.1	0.1	0	0	0	0	0	0	0	78° 0'	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	
0	0	0	0	0	0	0	0	0	77° 30'	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.7	
0	0	0	0	0	0	0	0	0	77° 15'	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	77° 0'	0.9	0.9	0.9	0.8	0.8	0.7	0.6	0.6	0.5	
0	0	0	0	0	0	0	0.1	0.1	76° 45'	0.9	0.8	0.8	0.7	0.6	0.6	0.5	0.4	0.3	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	76° 30'	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.2	
0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	76° 15'	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	76° 0'	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.3	
-0.1	-0.1	0	0	0	0	0.1	0.1	0.1	75° 45'	0.1	0	-0.1	-0.1	0	0	0.1	0.2	0.3	
-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	75° 30'	0	-0.1	-0.2	-0.3	-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	-0.1	75° 15'	0.1	-0.1	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	
0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1	75° 0'	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	
0.1	0.1	0.1	0.1	0	0	0	-0.1	-0.1	74° 45'	0.1	0.1	0.1	0.1	0.1	0.1	0	-0.1	-0.3	
0.1	0.1	0.1	0.1	0	0	0	-0.1	-0.1	74° 30'	0.1	0.1	0.2	0.3	0.4	0.4	0.3	0.1	-0.1	
0	0	0	0	0	0	0	-0.1	-0.1	74° 15'	0.1	0.2	0.3	0.5	0.5	0.5	0.4	0.3	0	
0	0	0	0	0	0	0	-0.1	-0.1	74° 0'	0.2	0.3	0.4	0.5	0.6	0.6	0.5	0.4	0.1	
0.1	0.1	0.1	0	0	0	0	0	-0.1	73° 45'	0.2	0.4	0.5	0.6	0.7	0.7	0.7	0.6	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	73° 30'	0.2	0.3	0.5	0.6	0.7	0.7	0.8	0.8	0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	73° 15'	0.2	0.3	0.4	0.5	0.6	0.6	0.8	0.9	1	
0.1	0	0	0	0.1	0.1	0.1	0.2	0.2	73° 0'	0.2	0.3	0.4	0.4	0.4	0.4	0.6	0.8	1	
0.1	0.1	0	0	0	0	0.1	0.1	0.1	72° 45'	0.3	0.4	0.4	0.3	0.2	0.2	0.3	0.5	0.8	
0.1	0.1	0.1	0.1	0.1	0	0	0	0.1	72° 30'	0.3	0.5	0.5	0.4	0.3	0.2	0.2	0.4	0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	72° 15'	0.3	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.4	
0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	72° 0'	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.4	0.5	
0.1	0	0	0.1	0.1	0.1	0.1	0.1	0	71° 45'	0.3	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	71° 30'	0.6	0.4	0.3	0.3	0.4	0.5	0.5	0.6	0.5	
0.2	0.2	0.1	0.1	0.1	0.1	0.1	0	0	71° 15'	0.7	0.5	0.4	0.4	0.4	0.5	0.6	0.5	0.5	
0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0	71° 0'	0.7	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.5	
0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0	70° 45'	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.6	
0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	70° 30'	0.3	0.4	0.5	0.6	0.7	0.8	0.8	0.8	0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	70° 15'	0.2	0.3	0.4	0.6	0.7	0.9	0.9	0.9	0.8	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	70° 0'	0.1	0.2	0.3	0.5	0.8	1	1	0.9	0.8	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	80° 0'	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 45'	1.5	1.6	1.7	1.7	1.8	1.7	1.7	1.6	1.5	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	79° 30'	1.5	1.6	1.6	1.7	1.6	1.6	1.5	1.4	1.3	
-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	79° 15'	1.4	1.4	1.4	1.3	1.3	1.2	1.1	1.1	1	
-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	79° 0'	1.2	1.2	1.1	1	0.9	0.9	0.8	0.8	0.8	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	78° 45'	1	1	0.9	0.8	0.7	0.7	0.6	0.6	0.7	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 30'	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 15'	0.9	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.5	
0	0	0	0	0	0	0	0	0	78° 0'	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 45'	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.5	
0	0	0	0	0	0.1	0.1	0.1	0.1	77° 30'	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.5	
0	0	0	0	0	0	0	0.1	0.1	77° 15'	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3	
0	0	0	0	0	0.1	0.1	0.1	0.1	77° 0'	0.5	0.4	0.4	0.3	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	76° 45'	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	
0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	76° 30'	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.3	
0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	76° 15'	0.3	0.2	0.2	0.2	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	76° 0'	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 45'	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.4	0.4	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	75° 30'	0	0.1	0.3	0.4	0.5	0.6	0.6	0.6	0.5	
-0.1	0	0	0	0	0.1	0.1	0.1	0	75° 15'	-0.2	-0.1	0	0.2	0.4	0.5	0.6	0.6	0.6	
-0.1	-0.1	-0.1	0	0	0	0	0.1	0	75° 0'	-0.3	-0.3	-0.2	-0.1	0.1	0.4	0.5	0.6	0.6	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	74° 45'	-0.3	-0.4	-0.4	-0.3	-0.1	0.1	0.4	0.6	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	74° 30'	-0.1	-0.3	-0.5	-0.5	-0.3	-0.1	0.2	0.5	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	74° 15'	0	-0.2	-0.4	-0.5	-0.4	-0.2	0	0.3	0.6	
-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	0	0	74° 0'	0.1	-0.1	-0.4	-0.5	-0.6	-0.5	-0.2	0.1	0.4	
-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	73° 45'	0.4	0.2	-0.2	-0.5	-0.7	-0.7	-0.6	-0.3	0	
0	0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	0	73° 30'	0.7	0.5	0.2	-0.3	-0.7	-0.9	-1	-0.8	-0.3	
0.1	0.1	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	73° 15'	1	0.9	0.6	0.1	-0.4	-0.9	-1.1	-0.9	-0.6	
0.2	0.2	0.1	0.1	0	0	-0.1	-0.2	-0.2	73° 0'	1	1.1	0.9	0.5	0	-0.5	-0.8	-0.8	-0.5	
0.1	0.2	0.2	0.2	0.1	0	-0.1	-0.1	-0.2	72° 45'	0.8	1	1	0.8	0.4	0	-0.3	-0.4	-0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0	-0.1	-0.1	72° 30'	0.6	0.8	0.9	0.9	0.7	0.4	0.2	0.1	0.1	
0	0	0.1	0.1	0.1	0.1	0	0	-0.1	72° 15'	0.4	0.6	0.7	0.8	0.8	0.7	0.5	0.4	0.4	
0	0	0	0	0	0	0	0	0	72° 0'	0.5	0.5	0.6	0.7	0.7	0.7	0.6	0.6	0.4	
0	0	0	0	0	0	0	0	0	71° 45'	0.5	0.5	0.6	0.6	0.7	0.7	0.6	0.6	0.5	
0	0	0	0	0	0	0	0	0	71° 30'	0.5	0.5	0.6	0.6	0.7	0.7	0.6	0.6	0.5	
0	0	0	0	0	0	0	0	0	71° 15'	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.6	0.5	
0	0	0	0	0	0	0	0	0	71° 0'	0.5	0.5	0.5	0.6	0.7	0.8	0.7	0.6	0.5	
0	0	0	0	0	0	0	0	0	70° 45'	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.5	
0.1	0	0	0	0	0	0	0	0	70° 30'	0.7	0.7	0.6	0.7	0.7	0.7	0.6	0.5	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	70° 15'	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.5	0.3	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	70° 0'	0.8	0.6	0.6	0.7	0.7	0.7	0.6	0.5	0.4	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	80° 0'	1.5	1.5	1.4	1.3	1.2	1.1	1	1	0.9	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 45'	1.5	1.4	1.3	1.1	1	0.9	0.8	0.8	0.8	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 30'	1.3	1.2	1.1	1	0.9	0.9	0.8	0.8	0.7	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 15'	1	1	1	0.9	0.9	0.9	0.8	0.7	0.7	
-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 0'	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.6	0.5	
-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 45'	0.7	0.7	0.7	0.7	0.7	0.6	0.5	0.4	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 30'	0.5	0.6	0.6	0.5	0.5	0.4	0.3	0.3	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 15'	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	78° 0'	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	77° 45'	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 30'	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 15'	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	77° 0'	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	76° 45'	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	76° 30'	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	76° 15'	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.7	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	76° 0'	0.4	0.4	0.5	0.6	0.7	0.7	0.8	0.8	0.8	
0.1	0	0	0	0	0	0	0	0	75° 45'	0.4	0.4	0.5	0.6	0.7	0.8	0.9	0.9	0.8	
0	0	0	0	0	0	0.1	0.1	0.1	75° 30'	0.5	0.5	0.5	0.5	0.6	0.7	0.8	0.8	0.8	
0	0	0	0	0	0	0.1	0.1	0.1	75° 15'	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.7	
0	0	0	0	0	0	0	0	0	75° 0'	0.6	0.6	0.5	0.4	0.4	0.4	0.5	0.6	0.6	
0	0	0	0	0	0	0	0	0	74° 45'	0.6	0.6	0.6	0.5	0.4	0.4	0.5	0.6	0.7	
0	0	0	0	0	0	0	0	0	74° 30'	0.6	0.7	0.7	0.6	0.5	0.5	0.5	0.6	0.6	
0	0	0	0	0	0	0	0	0	74° 15'	0.6	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.6	
0	0	0.1	0.1	0	0	0	0	0	74° 0'	0.4	0.6	0.7	0.7	0.6	0.5	0.5	0.5	0.5	
0	0.1	0.1	0.1	0.1	0.1	0	0	0	73° 45'	0	0.4	0.6	0.7	0.7	0.6	0.5	0.5	0.6	
0	0	0	0	0	0	0	0	0	73° 30'	-0.3	0.1	0.5	0.7	0.7	0.7	0.6	0.6	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	73° 15'	-0.6	-0.1	0.3	0.6	0.7	0.6	0.6	0.5	0.5	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0	73° 0'	-0.5	-0.1	0.2	0.4	0.5	0.4	0.3	0.3	0.3	
-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	72° 45'	-0.2	0	0.2	0.3	0.2	0.1	0.1	0.1	0.2	
-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	72° 30'	0.1	0.2	0.1	0.1	0	-0.1	-0.1	0	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 15'	0.4	0.3	0.1	0	-0.1	-0.1	-0.1	0	0.2	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	72° 0'	0.4	0.3	0.2	0	-0.1	-0.1	0	0.1	0.2	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	71° 45'	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.2	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	71° 30'	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	-0.1	71° 15'	0.5	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.2	
0	0	0	0	0	0	0	0	0	71° 0'	0.5	0.4	0.3	0.2	0.2	0.2	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	70° 45'	0.5	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	70° 30'	0.4	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.2	
0.1	0.1	0	0	0	0	0	0	0	70° 15'	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.2	0.1	
0.1	0.1	0	0	0	0	0	0	0	70° 0'	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	-0.1	-0.1	-0.1	-0.1	-0.1	80° 0'	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.8	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 45'	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.8	0.7	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	79° 30'	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.6	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	79° 15'	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.4	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	79° 0'	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 45'	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.4	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 30'	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 15'	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	78° 0'	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	0	77° 45'	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	0.1	0.1	0	0	0	77° 30'	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	77° 15'	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	77° 0'	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	
0.1	0	0	0	0	0	0	0	0	76° 45'	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	
0	0	0	0	0	0	0	0	0	76° 30'	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	
0	0	0	0	0	0	0	0	0	76° 15'	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4	
0	0	0	0	0	0	0	0	0	76° 0'	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.4	
0	0	0	0	0	0	0	0	0	75° 45'	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	75° 30'	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	75° 15'	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	
0	0	0	0	0	0	0	0	0	75° 0'	0.6	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.6	
0	0	0	0	0	0	0	0	0	74° 45'	0.7	0.7	0.8	0.8	0.8	0.8	0.7	0.6	0.6	
0	0	0	0	0	0	0	0	0	74° 30'	0.6	0.7	0.8	0.8	0.8	0.7	0.6	0.6	0.5	
0	0	0	0	0	0	0	0	0	74° 15'	0.6	0.7	0.7	0.8	0.7	0.7	0.6	0.6	0.5	
0	0	0	0	0	0	0	0	0	74° 0'	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	
0	0	0	0	0	0	0	0	0	73° 45'	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	
0	0	0	0	0	0	0	0	0	73° 30'	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	
0	0	0	0	0	0	0	0	0	73° 15'	0.5	0.5	0.6	0.7	0.8	0.8	0.7	0.7	0.7	
0	0	0	0	0	0	0	-0.1	-0.1	73° 0'	0.3	0.4	0.6	0.7	0.8	0.8	0.8	0.8	0.7	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 45'	0.2	0.4	0.6	0.7	0.8	0.9	0.8	0.8	0.7	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 30'	0.2	0.4	0.6	0.7	0.8	0.8	0.8	0.7	0.6	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	72° 15'	0.2	0.4	0.6	0.6	0.7	0.7	0.7	0.7	0.6	
-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	0.1	72° 0'	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.6	
-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	0.1	71° 45'	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.6	0.7	
-0.1	-0.1	-0.1	-0.1	0	0	0.1	0.1	0.1	71° 30'	0.2	0.1	0.1	0	0	0.1	0.3	0.5	0.6	
-0.1	-0.1	-0.1	0	0	0	0.1	0.1	0.1	71° 15'	0.2	0.1	0	-0.1	-0.2	-0.1	0	0.3	0.5	
0	0	0	0	0	0	0	0.1	0.1	71° 0'	0.3	0.2	0	-0.2	-0.3	-0.3	-0.1	0.1	0.4	
0	0	0	0	0	0	0	0	0.1	70° 45'	0.3	0.2	0	-0.2	-0.3	-0.3	-0.2	0	0.3	
0	0	0	0	0	0	0	0	0	70° 30'	0.2	0.1	0	-0.2	-0.2	-0.3	-0.2	0	0.3	
0	0	0	0	0	0	0	0	0.1	70° 15'	0.1	0	-0.1	-0.1	-0.2	-0.2	-0.2	0	0.2	
0	0	0	0	0	0.1	0.1	0.1	0.1	70° 0'	0.1	0	-0.1	-0.1	-0.2	-0.3	-0.2	-0.1	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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'	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	80° 0'	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 45'	0.7	0.6	0.6	0.5	0.4	0.4	0.4	0.5	0.5	
0	0	0	0	0	0	0	0	0	79° 30'	0.6	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.6	
0	0	0	0	0	0	0	0	0	79° 15'	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	
0	0	0	0	0	0	0	0	0	79° 0'	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	78° 45'	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	78° 30'	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
-0.1	-0.1	-0.1	0	0	0	0	0	0	78° 15'	0.3	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	78° 0'	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	77° 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	77° 30'	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	
0	0	0	0	0	0	0	0	0	77° 15'	0.3	0.3	0.2	0.1	0.1	0	0	0	0.1	
0	0	0	0	0	0	0	0	0	77° 0'	0.4	0.3	0.3	0.2	0.1	0.1	0	0.1	0.1	
0	0	0	0	0	0	0	0	0	76° 45'	0.4	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	76° 30'	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	76° 15'	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	76° 0'	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.1	
0	0	0	0	0	0	0	0	0	75° 45'	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	75° 30'	0.5	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	75° 15'	0.6	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.3	
0	0	0	0	0	0	-0.1	-0.1	-0.1	75° 0'	0.6	0.5	0.4	0.3	0.3	0.3	0.2	0.3	0.3	
0	0	0	0	0	0	-0.1	-0.1	-0.1	74° 45'	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	74° 30'	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.2	
0	0	0	0	0	0	0	0	0	74° 15'	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.2	0.2	
0	0	0	0	0	0	0	0	0	74° 0'	0.6	0.6	0.5	0.5	0.4	0.3	0.3	0.2	0.2	
0	0	0	0	0	0	0	-0.1	-0.1	73° 45'	0.6	0.6	0.5	0.5	0.4	0.3	0.3	0.2	0.2	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	73° 30'	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	73° 15'	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	73° 0'	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	72° 45'	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.3	0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	72° 30'	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.1	
0	0	0	0	0	0	0	0	0	72° 15'	0.6	0.5	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	0.1	0.1	0	72° 0'	0.6	0.6	0.5	0.4	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	71° 45'	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	71° 30'	0.6	0.7	0.6	0.5	0.4	0.3	0.3	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	71° 15'	0.5	0.6	0.6	0.6	0.5	0.4	0.4	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	71° 0'	0.4	0.6	0.7	0.7	0.6	0.5	0.5	0.4	0.4	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	70° 45'	0.3	0.5	0.7	0.7	0.7	0.6	0.5	0.5	0.4	
0	0	0.1	0.1	0.1	0.1	0.1	0	0	70° 30'	0.3	0.5	0.6	0.7	0.7	0.6	0.5	0.5	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	70° 15'	0.2	0.4	0.6	0.6	0.7	0.6	0.6	0.6	0.5	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	70° 0'	0.1	0.3	0.6	0.7	0.7	0.7	0.6	0.6	0.5	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 48 to 44 °W									
Correction to Latitude										Correction to Longitude									
48°	47°	47°	46°	46°	45°	45°	44°	44°	Longitude	48°	47°	47°	46°	46°	45°	45°	44°	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	0	0	0	0	80° 0'	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.7	0.7	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	79° 45'	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	
0	-0.1	-0.1	-0.1	-0.1	0	0	0	0	79° 30'	0.6	0.6	0.7	0.7	0.6	0.6	0.5	0.5	0.5	
0	0	0	0	0	0	0	0	0	79° 15'	0.6	0.7	0.6	0.6	0.6	0.5	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	79° 0'	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.5	
0	0	0	0	0	0	0	0	0	78° 45'	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	
0	0	0	0	0	0	0	0	0	78° 30'	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	0	78° 15'	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	78° 0'	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	77° 45'	0.2	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	77° 30'	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.3	
0	0	0	0	0	0	0	0	0	77° 15'	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.4	
0	0	0	0	0	0	0	0	0	77° 0'	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	
0	0	0	0	0	0	0	0	0	76° 45'	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	
-0.1	-0.1	-0.1	0	0	0	0	0	0	76° 30'	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	76° 15'	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	76° 0'	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	75° 45'	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.4	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	75° 30'	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	75° 15'	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	75° 0'	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	74° 45'	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	74° 30'	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	74° 15'	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	
0	0	0	0	0	0	0	0	0	74° 0'	0.2	0.2	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	73° 45'	0.2	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	0	0	0	73° 30'	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	0	0	-0.1	-0.1	73° 15'	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	
-0.1	-0.1	0	0	0	0	0	-0.1	-0.1	73° 0'	0.2	0.1	0	0	0	0.1	0.2	0.3	0.4	
0	0	0	0	0	0	0	0	-0.1	72° 45'	0.1	0	-0.1	-0.1	0.1	0.2	0.3	0.4	0.4	
0	0	0	0	0	0	0	0	0	72° 30'	0.1	0	-0.1	0	0.1	0.2	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	72° 15'	0.1	0.1	0	0.1	0.1	0.3	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	72° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	71° 45'	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	71° 30'	0.4	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	71° 15'	0.4	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	71° 0'	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	70° 45'	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	
0	0	0	0	0	0	0	0	0	70° 30'	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	
0	0	0	0	0	0	0	0	0	70° 15'	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	70° 0'	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 44 to 40 °W									
Correction to Latitude										Correction to Longitude									
44°	43°	43°	42°	42°	41°	41°	40°	40°	Longitude	44°	43°	43°	42°	42°	41°	41°	40°	40°	
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	80° 0'	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	79° 45'	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	
0	0	0	0	0	0	0	0	0	79° 30'	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	
0	0	0	0	0	0	0	0	0	79° 15'	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.4	
0	0	0	0	0	0	0	0	0	79° 0'	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.3	
0	0	0	0	0	0	0	0	0	78° 45'	0.5	0.5	0.5	0.5	0.4	0.3	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	78° 30'	0.5	0.5	0.5	0.4	0.3	0.2	0.2	0.1	0.1	
0	0	0	0	0	0	0	0	0	78° 15'	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	
0	0	0	0	0	0	0	0	0	78° 0'	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	77° 45'	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.4	
0	0	0	0	0	0	0	0	0	77° 30'	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.4	
0	0	0	0	0	0	0	-0.1	0	77° 15'	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	
0	0	0	0	0	0	0	-0.1	0	77° 0'	0.5	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.5	
0	0	0	0	0	0	0	0	0	76° 45'	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	
0	0	0	0	0	0	0	0	0	76° 30'	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.6	
0	0	0	0	0	0	0	0	0	76° 15'	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.6	
0	0	0	0	0	0	0	0	0	76° 0'	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	
0	0	0	0	0	0	0	0	0	75° 45'	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	
-0.1	0	0	0	0	0	0	0	0	75° 30'	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	
-0.1	0	0	0	0	0	0	0	0	75° 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	75° 0'	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	
0	0	0	0	0	0	0	0	0	74° 45'	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	74° 30'	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	74° 15'	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	74° 0'	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	0	73° 45'	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	73° 30'	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	73° 15'	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.2	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	73° 0'	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	
-0.1	-0.1	0	0	0	0	0	-0.1	0	72° 45'	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	
0	0	0	0	0	0	0	0	0	72° 30'	0.4	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	72° 15'	0.3	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	72° 0'	0.3	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	71° 45'	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	
0	0	0	0	0	0	-0.1	-0.1	0	71° 30'	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	
0	0	0	0	0	0	-0.1	-0.1	0	71° 15'	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.4	
0	0	0	0	0	0	0	0	0	71° 0'	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.4	
0	0	0	0	0	0	0	0	0	70° 45'	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	70° 30'	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.4	
0	0	0	0	0	0	0	0	0	70° 15'	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	70° 0'	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	80° 0'	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	
0	0	0	0	0	0	0	0	0	79° 45'	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	
0	0	0	0	0	0	0	0	0	79° 30'	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	
0	0	0	0	0	0	0	0	0	79° 15'	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	
0	0	0	0	0	0	0	0	0	79° 0'	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	0	78° 45'	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.5	
0	0	0	0	0	0	0	0	0	78° 30'	0.1	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.5	
0	0	0	0	0	0	0	0	0	78° 15'	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	
0	0	0	0	0	0	0	0	0	78° 0'	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 45'	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 30'	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 15'	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 0'	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	76° 45'	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	76° 30'	0.6	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	76° 15'	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	76° 0'	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	0	75° 45'	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	
0	0	0	0	0	0	0	0	0	75° 30'	0.3	0.3	0.2	0.3	0.3	0.4	0.5	0.5	0.5	
0	0	0	0	0	0	0	0	0	75° 15'	0.3	0.2	0.2	0.2	0.3	0.4	0.5	0.5	0.6	
0	0	0	0	0	0	0	0.1	0.1	75° 0'	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.5	
0	0	0	0	0	0	0	0	0	74° 45'	0.3	0.2	0.2	0.1	0.2	0.2	0.3	0.4	0.5	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	74° 30'	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.5	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	74° 15'	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	74° 0'	0.2	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	73° 45'	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	73° 30'	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.5	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	73° 15'	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	73° 0'	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 45'	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.5	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 30'	0.3	0.3	0.4	0.4	0.5	0.6	0.5	0.5	0.4	
0	0	0	-0.1	-0.1	-0.1	0	0	0	72° 15'	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.3	
0	0	0	0	0	0	0	0	0	72° 0'	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.3	0.2	
0	0	0	0	0	0	0	0	0	71° 45'	0.4	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	-0.1	-0.1	71° 30'	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	71° 15'	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	71° 0'	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	-0.1	70° 45'	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	
0	0	0	0	0	0	0	0	-0.1	70° 30'	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
0	0	0	0	0	0	0	0	-0.1	70° 15'	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	
0	0	0	0	0	0	0	0	-0.1	70° 0'	0.3	0.4	0.4	0.4	0.3	0.3	0.4	0.5	0.6	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 36 to 32 °W									
Correction to Latitude										Correction to Longitude									
36°	35°	35°	34°	34°	33°	33°	32°	32°	Longitude	36°	35°	35°	34°	34°	33°	33°	32°	32°	
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	80° 0'	0.7	0.7	0.6	0.6	0.5	0.3	0.1	0	-0.2	
0	0	0	0	0	0	0	0	0	79° 45'	0.6	0.6	0.5	0.4	0.3	0.2	0	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	79° 30'	0.4	0.4	0.3	0.3	0.2	0.1	0	-0.1	-0.3	
0	0	0	0	0	0	0	0	0	79° 15'	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0	-0.1	
0	0	0	0	0	0	0	0	0	79° 0'	0.3	0.3	0.3	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	78° 45'	0.5	0.4	0.4	0.3	0.2	0.1	0.1	0	-0.1	
0	0	0	0	0	0	-0.1	-0.1	-0.1	78° 30'	0.5	0.5	0.4	0.3	0.3	0.2	0.1	0	-0.1	
0	0	0	0	0	0	0	-0.1	-0.1	78° 15'	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.1	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	78° 0'	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 45'	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 30'	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 15'	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	
-0.1	0	0	0	0	0	0	0	-0.1	77° 0'	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	
0	0	0	0	0	0	0	0	0	76° 45'	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5	
0	0	0	0	0	0	0	0	-0.1	76° 30'	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	
0	0	0	0	0	0	0	0	0	76° 15'	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	
0	0	0	0	0	0	0	0	0	76° 0'	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6	
0	0	0	0	0	0	0	0	0	75° 45'	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.4	0.5	
0	0	0	0	0	0	0	0	0	75° 30'	0.5	0.5	0.4	0.3	0.3	0.2	0.2	0.3	0.4	
0	0	0	0	0	0	0	0	0	75° 15'	0.6	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.3	
0.1	0.1	0.1	0	0	0	0	0	0	75° 0'	0.5	0.5	0.4	0.3	0.3	0.2	0.2	0.3	0.3	
0	0	0	0	0	0	-0.1	-0.1	-0.1	74° 45'	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	74° 30'	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	
-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	74° 15'	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	
-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	74° 0'	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	
-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	73° 45'	0.5	0.3	0.2	0.1	0.1	0.2	0.3	0.4	0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	73° 30'	0.4	0.3	0.2	0.1	0.1	0.1	0.3	0.4	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	73° 15'	0.4	0.3	0.3	0.2	0.1	0.1	0.2	0.3	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	73° 0'	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	72° 45'	0.5	0.4	0.3	0.2	0.1	0	0	0	0.1	
-0.1	0	0	0	0	0	0	0	0	72° 30'	0.4	0.3	0.2	0.1	0	0	-0.1	0	0.1	
0	0	0	0	0	0	0	-0.1	-0.1	72° 15'	0.3	0.2	0.2	0.1	0.1	0	0	0	0.1	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	72° 0'	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	71° 45'	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	71° 30'	0.3	0.3	0.3	0.4	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	71° 15'	0.3	0.3	0.4	0.4	0.3	0.2	0.1	0.1	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	71° 0'	0.3	0.4	0.4	0.4	0.3	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	70° 45'	0.3	0.4	0.4	0.4	0.3	0.2	0.1	0.1	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	70° 30'	0.4	0.4	0.4	0.4	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	70° 15'	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	70° 0'	0.6	0.5	0.4	0.3	0.2	0.2	0.3	0.3	0.2	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	-0.2	-0.4	-0.5	-0.6	-0.7	-0.7	-0.7	-0.8	-0.8	
0	0	0	0	0	0	0.1	0.1	0.1	79° 45'	-0.3	-0.5	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	
0	0	0	0	0	0	0	0	0	79° 30'	-0.3	-0.4	-0.5	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7	
0	0	0	0	0	0	0	0	0	79° 15'	-0.1	-0.2	-0.3	-0.5	-0.6	-0.7	-0.7	-0.8	-0.9	
0	0	0	0	0	0	0	0	0	79° 0'	0	-0.1	-0.3	-0.4	-0.5	-0.7	-0.8	-0.9	-0.9	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	78° 45'	-0.1	-0.2	-0.3	-0.4	-0.5	-0.7	-0.8	-0.9	-0.9	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 30'	-0.1	-0.2	-0.3	-0.4	-0.6	-0.7	-0.8	-0.8	-0.9	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 15'	0.1	-0.1	-0.2	-0.3	-0.5	-0.6	-0.7	-0.7	-0.8	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	78° 0'	0.3	0.1	-0.1	-0.2	-0.4	-0.5	-0.6	-0.6	-0.7	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	77° 45'	0.3	0.2	0	-0.2	-0.3	-0.4	-0.5	-0.5	-0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	77° 30'	0.3	0.2	0	-0.1	-0.3	-0.4	-0.4	-0.4	-0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	77° 15'	0.3	0.2	0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	77° 0'	0.3	0.3	0.2	0.1	0	0	-0.1	-0.1	-0.1	
0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	76° 45'	0.5	0.5	0.4	0.3	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	76° 30'	0.6	0.6	0.6	0.5	0.4	0.3	0.2	0.1	-0.1	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	76° 15'	0.6	0.6	0.6	0.6	0.5	0.4	0.2	0	-0.2	
0	0	0	0	0	0	0	0	0	76° 0'	0.6	0.6	0.6	0.6	0.5	0.4	0.3	0	-0.2	
0	0	0	0	0	0	0	0	0	75° 45'	0.5	0.5	0.6	0.6	0.5	0.4	0.3	0.1	-0.2	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	75° 30'	0.4	0.4	0.5	0.5	0.5	0.4	0.3	0.1	-0.1	
0	0	0	0	0	0	0	0	0	75° 15'	0.3	0.4	0.4	0.5	0.5	0.4	0.3	0.1	-0.1	
0	0	0	0	0	0	0	0	0	75° 0'	0.3	0.4	0.5	0.5	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	0	74° 45'	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	74° 30'	0.4	0.4	0.4	0.3	0.3	0.2	0.1	0	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	74° 15'	0.4	0.4	0.3	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	74° 0'	0.4	0.4	0.3	0.1	0	-0.1	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	73° 45'	0.5	0.4	0.3	0.1	-0.1	-0.2	-0.2	-0.1	0	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	73° 30'	0.4	0.4	0.2	0	-0.2	-0.3	-0.3	-0.1	0.1	
-0.1	-0.1	-0.1	0	0	0	0	-0.1	-0.1	73° 15'	0.3	0.3	0.1	-0.1	-0.3	-0.4	-0.3	0	0.2	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.2	73° 0'	0.2	0.2	0.1	-0.1	-0.2	-0.3	-0.2	0.1	0.3	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	72° 45'	0.1	0.2	0.2	0.1	0	-0.1	0	0.1	0.3	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 30'	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.2	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	72° 15'	0.1	0.2	0.3	0.2	0.1	0	0	0.2	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	72° 0'	0.2	0.2	0.2	0.1	-0.1	-0.2	-0.1	0.1	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	71° 45'	0.2	0.3	0.2	0	-0.2	-0.4	-0.3	0	0.4	
-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	71° 30'	0.3	0.3	0.3	0.1	-0.2	-0.4	-0.4	-0.1	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	71° 15'	0.2	0.4	0.4	0.3	0	-0.3	-0.3	-0.1	0.2	
-0.1	-0.1	-0.1	0	0	0	0	0	0	71° 0'	0.2	0.3	0.4	0.2	0	-0.3	-0.3	-0.1	0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	70° 45'	0.1	0.2	0.2	0.1	-0.2	-0.3	-0.3	-0.1	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	70° 30'	0.1	0.1	0	-0.1	-0.3	-0.4	-0.4	-0.2	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	70° 15'	0.2	0.1	0	-0.1	-0.2	-0.3	-0.4	-0.2	0	
0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	70° 0'	0.2	0.1	0.1	0.1	0	-0.1	-0.2	-0.2	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 28 to 24 °W								
Correction to Latitude										Correction to Longitude								
28°	27°	27°	26°	26°	25°	25°	24°	24°	Longitude	28°	27°	27°	26°	26°	25°	25°	24°	24°
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	80° 0'	-0.8	-0.8	-0.8	-0.8	-0.8	-0.7	-0.7	-0.5	-0.4
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 45'	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6
0	0	0	0	0.1	0.1	0.1	0.1	0.1	79° 30'	-0.7	-0.7	-0.7	-0.7	-0.8	-0.8	-0.7	-0.7	-0.7
0	0	0	0	0	0	0	0.1	0.1	79° 15'	-0.9	-0.9	-0.9	-0.9	-0.9	-0.8	-0.8	-0.7	-0.7
0	0	0	0	0	0	0	0	0	79° 0'	-0.9	-1	-1	-1	-0.9	-0.9	-0.8	-0.8	-0.7
0	0	0	0	0	0	0	0	0	78° 45'	-0.9	-1	-1	-1	-0.9	-0.9	-0.8	-0.8	-0.8
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 30'	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 15'	-0.8	-0.8	-0.8	-0.8	-0.9	-0.9	-1	-1	-1
-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	78° 0'	-0.7	-0.7	-0.8	-0.8	-0.9	-1	-1.1	-1.1	-1.1
-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	77° 45'	-0.6	-0.6	-0.7	-0.9	-1	-1.2	-1.3	-1.3	-1.3
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	77° 30'	-0.5	-0.5	-0.7	-0.9	-1.1	-1.3	-1.5	-1.5	-1.5
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	77° 15'	-0.3	-0.4	-0.5	-0.8	-1	-1.4	-1.6	-1.8	-1.8
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	77° 0'	-0.1	-0.2	-0.4	-0.6	-1	-1.4	-1.7	-2	-2
-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	76° 45'	0	-0.2	-0.3	-0.6	-1	-1.4	-1.8	-2	-2.1
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	76° 30'	-0.1	-0.2	-0.5	-0.7	-1.1	-1.4	-1.7	-1.8	-1.8
-0.1	-0.1	-0.1	0	0	0	0	-0.1	-0.1	76° 15'	-0.2	-0.4	-0.6	-0.9	-1.2	-1.4	-1.5	-1.5	-1.4
0	0	0	0	0	0	-0.1	-0.1	-0.2	76° 0'	-0.2	-0.5	-0.7	-1	-1.1	-1.2	-1.2	-1	-0.8
0	0	0	0	0	-0.1	-0.1	-0.2	-0.2	75° 45'	-0.2	-0.4	-0.7	-0.8	-0.9	-0.9	-0.8	-0.6	-0.4
0.1	0.1	0	0	0	-0.1	-0.1	-0.2	-0.2	75° 30'	-0.1	-0.3	-0.5	-0.6	-0.5	-0.4	-0.3	-0.1	0
0	0	0	0	0	-0.1	-0.1	-0.2	-0.2	75° 15'	-0.1	-0.2	-0.3	-0.3	-0.2	0	0.2	0.3	0.3
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	75° 0'	-0.1	-0.2	-0.2	-0.1	0.1	0.3	0.5	0.5	0.5
0	0	0	0	0	0	0	0	0	74° 45'	-0.1	-0.2	-0.2	0	0.2	0.4	0.6	0.6	0.5
0	0	0	-0.1	-0.1	0	0	0	0	74° 30'	-0.1	-0.2	-0.2	0	0.1	0.3	0.5	0.5	0.4
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	74° 15'	-0.1	-0.1	-0.1	0	0.1	0.3	0.3	0.3	0.2
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	74° 0'	0	0	0	0.1	0.1	0.2	0.2	0.2	0.2
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	73° 45'	0	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	73° 30'	0.1	0.3	0.3	0.3	0.2	0.1	0	0	0
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	73° 15'	0.2	0.4	0.5	0.4	0.2	0	-0.1	-0.1	0
-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	73° 0'	0.3	0.5	0.5	0.3	0.1	-0.2	-0.2	-0.2	0
-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 45'	0.3	0.4	0.3	0.1	-0.1	-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	72° 30'	0.3	0.4	0.3	0	-0.2	-0.4	-0.3	-0.1	0.1
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 15'	0.4	0.5	0.4	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	-0.1	72° 0'	0.4	0.6	0.6	0.4	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	71° 45'	0.4	0.7	0.8	0.5	0.2	-0.1	-0.3	-0.2	-0.1
-0.1	-0.1	-0.1	0	0	0.1	0.1	0	0	71° 30'	0.3	0.6	0.6	0.4	0.1	-0.2	-0.2	-0.1	0
-0.1	-0.1	0	0	0.1	0.1	0.1	0.1	0.1	71° 15'	0.2	0.4	0.3	0.1	-0.2	-0.3	-0.2	0.1	0.3
0	0	0	0	0	0	0	0	0	71° 0'	0.1	0.3	0.2	-0.1	-0.4	-0.4	-0.2	0.2	0.5
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	70° 45'	0.2	0.3	0.2	0	-0.3	-0.4	-0.2	0.1	0.4
0	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	70° 30'	0.1	0.3	0.4	0.2	-0.1	-0.2	-0.2	0	0.2
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	70° 15'	0	0.3	0.4	0.3	0.2	0	-0.2	-0.2	-0.1
-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	70° 0'	-0.1	0.1	0.3	0.3	0.2	0	-0.2	-0.3	-0.2

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	80° 0'	-0.4	-0.3	-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	79° 45'	-0.6	-0.5	-0.4	-0.2	-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	79° 30'	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2	0	0.1	0.2	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	79° 15'	-0.7	-0.6	-0.6	-0.5	-0.4	-0.3	-0.1	0	0.2	
0	0	0	0	0	0	0	0	0	79° 0'	-0.7	-0.7	-0.6	-0.5	-0.4	-0.3	-0.1	0	0.2	
0	0	0	0	0	0	0	0	0	78° 45'	-0.8	-0.7	-0.7	-0.6	-0.5	-0.3	-0.1	0.1	0.3	
-0.1	-0.1	-0.1	0	0	0	0	0	0	78° 30'	-0.9	-0.8	-0.8	-0.7	-0.5	-0.3	-0.1	0.2	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 15'	-1	-0.9	-0.9	-0.7	-0.5	-0.3	0	0.2	0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 0'	-1.1	-1	-0.9	-0.7	-0.5	-0.2	0	0.2	0.4	
-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	-0.1	77° 45'	-1.3	-1.1	-0.9	-0.6	-0.3	0	0.2	0.4	0.5	
-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	77° 30'	-1.5	-1.3	-1	-0.6	-0.2	0.1	0.4	0.6	0.6	
-0.2	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.1	77° 15'	-1.8	-1.6	-1.2	-0.8	-0.3	0.2	0.5	0.7	0.7	
-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 0'	-2	-1.9	-1.5	-1	-0.4	0.1	0.5	0.7	0.7	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	76° 45'	-2.1	-1.9	-1.6	-1.1	-0.5	0	0.4	0.6	0.6	
-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	76° 30'	-1.8	-1.7	-1.3	-0.9	-0.5	0	0.2	0.4	0.4	
-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	76° 15'	-1.4	-1.1	-0.9	-0.5	-0.3	0	0.1	0.1	0.1	
-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	76° 0'	-0.8	-0.6	-0.4	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	
-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	75° 45'	-0.4	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	
-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	75° 30'	0	0	0	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	
-0.2	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	75° 15'	0.3	0.1	-0.1	-0.3	-0.5	-0.6	-0.6	-0.5	-0.3	
-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	75° 0'	0.5	0.2	-0.1	-0.4	-0.6	-0.7	-0.6	-0.5	-0.3	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	74° 45'	0.5	0.2	-0.1	-0.4	-0.6	-0.6	-0.5	-0.3	-0.2	
0	0	0	0	0	0	-0.1	-0.1	-0.1	74° 30'	0.4	0.2	-0.1	-0.3	-0.4	-0.4	-0.3	-0.1	0	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	74° 15'	0.2	0.1	-0.1	-0.2	-0.2	-0.2	0	0.1	0.2	
-0.1	0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	74° 0'	0.2	0.1	0	0	0	0	0.1	0.1	0.2	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	73° 45'	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	73° 30'	0	0.1	0.2	0.3	0.3	0.2	0.1	0	0	
0	0	0	0	-0.1	-0.1	0	0	-0.1	73° 15'	0	0.1	0.3	0.3	0.3	0.2	0.1	0	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	73° 0'	0	0.2	0.3	0.3	0.3	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	72° 45'	0.1	0.3	0.4	0.4	0.2	0.1	0	0	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 30'	0.1	0.3	0.4	0.4	0.2	0.1	0	0	0.1	
-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	-0.1	72° 15'	0.1	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	0	-0.1	-0.1	-0.1	72° 0'	-0.1	0.1	0.1	0.1	0.2	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	71° 45'	-0.1	0	0	0	0.1	0.3	0.4	0.4	0.3	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	71° 30'	0	0.1	0.1	0.1	0.1	0.2	0.4	0.4	0.2	
0.1	0	0	-0.1	-0.1	-0.1	-0.1	0	0	71° 15'	0.3	0.4	0.3	0.2	0.1	0.2	0.3	0.3	0.1	
0	0	0	0	0	0	-0.1	0	0	71° 0'	0.5	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0	
-0.1	0	0	0	0	0	0	-0.1	-0.1	70° 45'	0.4	0.5	0.4	0.3	0.2	0.3	0.3	0.2	0	
-0.1	-0.1	0	0	0	0	-0.1	-0.1	-0.1	70° 30'	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.3	0.1	
-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	70° 15'	-0.1	0	0.1	0.2	0.4	0.5	0.5	0.4	0.1	
-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	70° 0'	-0.2	-0.2	0	0.2	0.3	0.4	0.4	0.3	0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 20 to 16 °W									
Correction to Latitude										Correction to Longitude									
20°	19°	19°	18°	18°	17°	17°	16°	16°	Longitude	20°	19°	19°	18°	18°	17°	17°	16°	16°	
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	80° 0'	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	
0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	79° 45'	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	79° 30'	0.2	0.3	0.3	0.4	0.4	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	79° 15'	0.2	0.3	0.4	0.5	0.5	0.4	0.4	0.3	0.2	
0	0	0	0	0	0	0	0	0	79° 0'	0.2	0.4	0.5	0.5	0.5	0.5	0.4	0.3	0.2	
0	0	0	0	0	0	0	0	0	78° 45'	0.3	0.5	0.6	0.6	0.5	0.4	0.3	0.2	0.1	
0	0	0	0	0	0	0	0	0	78° 30'	0.4	0.5	0.6	0.6	0.5	0.3	0.2	0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	78° 15'	0.4	0.5	0.5	0.5	0.4	0.2	0	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	78° 0'	0.4	0.5	0.4	0.3	0.2	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	77° 45'	0.5	0.4	0.3	0.2	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	77° 30'	0.6	0.5	0.3	0.1	-0.2	-0.3	-0.3	-0.2	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 15'	0.7	0.5	0.3	0	-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	77° 0'	0.7	0.5	0.3	0	-0.3	-0.4	-0.3	-0.1	0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	76° 45'	0.6	0.5	0.3	0	-0.1	-0.2	-0.1	0.1	0.4	
-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	76° 30'	0.4	0.3	0.2	0.1	0.1	0.1	0.3	0.5	0.6	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	76° 15'	0.1	0.1	0	0.1	0.2	0.3	0.5	0.6	0.8	
-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	76° 0'	-0.2	-0.2	-0.1	0	0.1	0.3	0.5	0.6	0.7	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	75° 45'	-0.3	-0.3	-0.2	-0.1	0	0.2	0.3	0.5	0.6	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	75° 30'	-0.3	-0.2	-0.1	0	0.1	0.1	0.2	0.3	0.4	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	75° 15'	-0.3	-0.1	0	0.1	0.1	0.1	0.2	0.3	0.3	
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	75° 0'	-0.3	-0.1	0	0.1	0.2	0.2	0.2	0.3	0.3	
-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	74° 45'	-0.2	0	0.1	0.2	0.2	0.3	0.3	0.3	0.3	
-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	74° 30'	0	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	
-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	74° 15'	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.1	
-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	74° 0'	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	73° 45'	0.1	0.1	0.1	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	73° 30'	0	0	0.1	0.2	0.3	0.3	0.2	0	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	73° 15'	0	0.1	0.2	0.3	0.3	0.3	0.1	-0.1	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	73° 0'	0.1	0.1	0.2	0.3	0.3	0.2	0	-0.2	-0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	72° 45'	0.1	0.2	0.2	0.2	0.1	0	-0.2	-0.3	-0.3	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	72° 30'	0.1	0.1	0.1	0	-0.1	-0.2	-0.2	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	-0.1	72° 15'	0.1	0.1	0	-0.1	-0.2	-0.3	-0.2	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	72° 0'	0.3	0.1	-0.1	-0.3	-0.3	-0.3	-0.1	0	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	71° 45'	0.3	0.1	-0.2	-0.4	-0.4	-0.2	0	0.2	0.2	
-0.1	0	0	0	0	-0.1	-0.1	-0.1	-0.1	71° 30'	0.2	0	-0.3	-0.4	-0.3	-0.1	0.1	0.2	0.2	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	71° 15'	0.1	-0.1	-0.3	-0.3	-0.1	0.1	0.2	0.2	0.2	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	71° 0'	0	-0.2	-0.3	-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	-0.1	70° 45'	0	-0.2	-0.2	-0.1	0.1	0.3	0.3	0.2	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	70° 30'	0.1	-0.2	-0.3	-0.2	0.1	0.2	0.3	0.2	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	70° 15'	0.1	-0.2	-0.3	-0.2	0	0.2	0.2	0.2	0	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	0	70° 0'	0.1	-0.2	-0.2	-0.2	0	0.1	0.2	0.1	0	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 12 to 8 °W									
Correction to Latitude										Correction to Longitude									
12°	11°	11°	10°	10°	9°	9°	8°	8°	Longitude	12°	11°	11°	10°	10°	9°	9°	8°	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	-0.1	80° 0'	0.2	0.2	0.4	0.5	0.6	0.7	0.8	0.8	0.7	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	79° 45'	0.3	0.4	0.5	0.7	0.8	0.8	0.8	0.8	0.7	
0	0	0	0	0	0	0	-0.1	-0.1	79° 30'	0.4	0.6	0.7	0.8	0.9	1	1	0.9	0.8	
0	0	0	0	0	0	0	0	0	79° 15'	0.5	0.6	0.8	0.9	1	1.1	1.1	1.1	1	
0	0	0	0	0	0	0	0.1	0	79° 0'	0.5	0.6	0.6	0.7	0.8	0.9	1.1	1.1	1.1	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	78° 45'	0.5	0.4	0.4	0.4	0.5	0.6	0.8	1	1.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 30'	0.6	0.5	0.3	0.2	0.2	0.4	0.6	0.9	1.1	
-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	78° 15'	0.9	0.6	0.4	0.2	0.2	0.2	0.4	0.7	0.9	
-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	78° 0'	1	0.8	0.5	0.3	0.2	0.3	0.4	0.6	0.8	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 45'	1	0.7	0.5	0.3	0.3	0.3	0.4	0.6	0.7	
-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 30'	0.8	0.6	0.4	0.2	0.2	0.3	0.5	0.6	0.6	
-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	77° 15'	0.7	0.4	0.2	0.1	0.2	0.3	0.4	0.6	0.6	
-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	77° 0'	0.7	0.4	0.3	0.2	0.2	0.2	0.3	0.4	0.4	
-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	76° 45'	0.7	0.5	0.4	0.3	0.3	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	76° 30'	0.6	0.6	0.5	0.5	0.4	0.3	0.2	0	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	76° 15'	0.4	0.5	0.6	0.6	0.5	0.4	0.2	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	76° 0'	0.3	0.4	0.4	0.5	0.4	0.3	0.1	-0.1	-0.2	
-0.2	-0.1	-0.1	-0.1	-0.1	0	0	0	0	75° 45'	0.2	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	0	0	0	75° 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	-0.1	-0.1	-0.1	-0.1	75° 15'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	75° 0'	-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	-0.1	74° 45'	-0.3	-0.2	-0.2	-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	74° 30'	-0.2	-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	74° 15'	-0.1	-0.1	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	74° 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	-0.1	-0.1	73° 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	73° 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	73° 15'	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	73° 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	72° 45'	0	0.1	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	72° 30'	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	-0.1	-0.1	-0.1	72° 15'	0	0.1	0.1	0	0	-0.1	-0.1	-0.2	-0.1	
-0.1	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1	72° 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	-0.1	71° 45'	-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	-0.1	-0.1	71° 30'	-0.2	-0.2	-0.2	-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	71° 15'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0	-0.1	-0.1	
0	0	0	0	-0.1	-0.1	-0.1	0	0	71° 0'	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0	0	0	0	0	0	0	70° 45'	-0.2	-0.2	-0.2	-0.1	0	0	-0.1	-0.2	-0.3	
0	0	0	0	0	0	0	0	0	70° 30'	-0.2	-0.3	-0.2	-0.1	-0.1	0	-0.1	-0.2	-0.4	
0	0	0	0	0	0	0	0	0	70° 15'	-0.2	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	-0.2	-0.4	
0	0	0	0	0	0	0	0	0	70° 0'	-0.2	-0.3	-0.3	-0.3	-0.2	-0.1	-0.1	-0.2	-0.4	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °N										Longitude 8 to 4 °W									
Correction to Latitude										Correction to Longitude									
8°	7°	7°	6°	6°	5°	5°	4°	4°	Longitude	8°	7°	7°	6°	6°	5°	5°	4°	4°	
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	80° 0'	0.7	0.6	0.4	0.2	0	-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	79° 45'	0.7	0.5	0.3	0.1	-0.1	-0.3	-0.4	-0.5	-0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 30'	0.8	0.6	0.4	0.1	-0.1	-0.3	-0.5	-0.6	-0.6	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	79° 15'	1	0.8	0.6	0.3	0	-0.3	-0.5	-0.6	-0.7	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	79° 0'	1.1	1.1	0.9	0.6	0.3	-0.1	-0.4	-0.6	-0.7	
0	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	78° 45'	1.2	1.2	1.2	0.9	0.6	0.2	-0.2	-0.5	-0.7	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 30'	1.1	1.3	1.3	1.1	0.8	0.4	0	-0.4	-0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	78° 15'	0.9	1.1	1.2	1	0.8	0.4	0	-0.3	-0.6	
-0.2	-0.1	-0.1	-0.1	-0.1	0	0	0	0	78° 0'	0.8	0.9	0.8	0.7	0.5	0.2	-0.1	-0.3	-0.4	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	77° 45'	0.7	0.7	0.6	0.4	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	77° 30'	0.6	0.6	0.4	0.2	-0.1	-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	77° 15'	0.6	0.5	0.4	0.1	-0.1	-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	77° 0'	0.4	0.4	0.3	0.1	-0.1	-0.3	-0.4	-0.4	-0.3	
-0.1	-0.1	-0.1	0	0	0	0	0	0	76° 45'	0.2	0.1	0	-0.1	-0.2	-0.3	-0.4	-0.3	-0.3	
-0.1	-0.1	0	0	0	0	0	0	0	76° 30'	-0.1	-0.2	-0.3	-0.3	-0.4	-0.4	-0.3	-0.3	-0.2	
0	0	0	0	0	-0.1	-0.1	-0.1	-0.1	76° 15'	-0.2	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	76° 0'	-0.2	-0.3	-0.3	-0.3	-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	75° 45'	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.2	-0.3	-0.3	
0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	75° 30'	-0.1	0	0	0.1	0	0	-0.1	-0.2	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	75° 15'	0	0	0	0	0	0	-0.1	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	75° 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	-0.1	-0.1	74° 45'	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	-0.1	74° 30'	0	0	0	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	74° 15'	-0.1	0	0	0	0	0	-0.1	-0.1	-0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	74° 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	-0.1	-0.1	-0.1	73° 45'	-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	73° 30'	0	-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	-0.1	-0.1	73° 15'	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	-0.1	-0.1	-0.1	73° 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	72° 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	-0.1	72° 30'	-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	72° 15'	-0.1	-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	-0.1	-0.1	72° 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	-0.1	-0.1	-0.1	-0.1	71° 45'	0	0	0	0	-0.1	-0.1	-0.1	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	71° 30'	0	0	0	0	-0.1	-0.1	-0.2	-0.2	-0.2	
-0.1	0	0	0	0	0	0	0	0	71° 15'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	
0	0	0	0.1	0.1	0.1	0.1	0	0	71° 0'	-0.2	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	70° 45'	-0.3	-0.4	-0.4	-0.3	-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	70° 30'	-0.4	-0.5	-0.5	-0.3	-0.1	0	0	0	-0.1	
0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	70° 15'	-0.4	-0.5	-0.5	-0.3	-0.1	0	0.1	0	-0.1	
0	0	0	0	0	0	0.1	0.1	0.1	70° 0'	-0.4	-0.5	-0.5	-0.3	-0.1	0	0.1	0	-0.1	

Correct Astronomical Position to WGS84

Latitude 70 to 80 °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	0	0	0	0	0	0	0	0	80° 0'	-0.4	-0.3	-0.2	-0.1	0	0.1	0.2	0.3	0.3	
-0.1	-0.1	-0.1	0	0	0	0	0	0	79° 45'	-0.5	-0.4	-0.3	-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	0	79° 30'	-0.6	-0.5	-0.4	-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	0	79° 15'	-0.7	-0.6	-0.4	-0.2	0	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	79° 0'	-0.7	-0.7	-0.5	-0.3	0	0.2	0.4	0.5	0.5	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	78° 45'	-0.7	-0.7	-0.6	-0.4	-0.1	0.2	0.5	0.6	0.7	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	78° 30'	-0.6	-0.7	-0.7	-0.5	-0.2	0.1	0.3	0.5	0.6	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	78° 15'	-0.6	-0.6	-0.6	-0.5	-0.3	0	0.2	0.3	0.4	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	78° 0'	-0.4	-0.4	-0.3	-0.2	-0.1	0	0	0.1	0.1	
0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	77° 45'	-0.2	-0.1	0	0.1	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	77° 30'	-0.2	0	0.2	0.3	0.4	0.3	0.1	-0.1	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	0	0	-0.1	0	77° 15'	-0.2	-0.1	0.1	0.3	0.3	0.3	0.2	0	-0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	77° 0'	-0.3	-0.2	0	0.1	0.2	0.2	0.1	0.1	0	
0	0	0	0	0	0	0	-0.1	-0.1	76° 45'	-0.3	-0.1	0	0.1	0.2	0.2	0.2	0.1	0	
0	0	0	0	0	0	-0.1	-0.1	-0.1	76° 30'	-0.2	-0.1	0.1	0.2	0.3	0.3	0.3	0.1	0	
-0.1	-0.1	0	0	0	0	0	0	0	76° 15'	-0.2	-0.1	0.1	0.2	0.3	0.4	0.3	0.2	0.1	
-0.1	-0.1	-0.1	0	0	0	0	0	0	76° 0'	-0.2	-0.2	-0.1	0	0.2	0.3	0.3	0.3	0.2	
-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	75° 45'	-0.3	-0.4	-0.3	-0.2	0	0.1	0.3	0.3	0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	75° 30'	-0.3	-0.4	-0.4	-0.3	-0.2	-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	75° 15'	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.1	0	0.1	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	75° 0'	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	0	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	74° 45'	0	0	-0.1	-0.1	-0.2	-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	74° 30'	-0.1	-0.1	0	-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	74° 15'	-0.1	-0.1	0	0	0	-0.1	-0.2	-0.2	-0.3	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	74° 0'	-0.1	-0.1	-0.1	0	0	0	-0.1	-0.2	-0.2	
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	73° 45'	-0.1	-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	0	-0.1	0	73° 30'	0	-0.1	-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	73° 15'	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	73° 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	-0.1	-0.1	0	72° 45'	-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	-0.1	0	72° 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	72° 15'	0	0	0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	
-0.1	-0.1	0	0	0	0	0	0	0	72° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
-0.1	0	0	0	0	0	0	0	0	71° 45'	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	
0	0	0	0	0	0	0	0	0	71° 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	71° 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	0.1	71° 0'	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	
0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	70° 45'	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	
0.1	0.1	0.1	0.1	0.1	0	0	0	0	70° 30'	-0.1	-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	70° 15'	-0.1	-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	70° 0'	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	