1876.

NEW ZEALAND.

COMPUTATION OF LONGITUDE BETWEEN SYDNEY AND WELLINGTON,

BY THE ASTRONOMER ROYAL, SYDNEY.

Presented to both Houses of the General Assembly by Command of His Excellency.

The Hon. W. B. D. MANTELL to the Hon. the COLONIAL SECRETARY.

SIR,— Wellington, 1st May, 1876.

I have the honor to enclose, for the information of the Government, a copy of tables recently received by the Ven. Archdeacon Stock from the Astronomer Royal, Sydney, containing the computations of longitude based on signals exchanged between this Observatory and the Sydney Observatory, by electric cable, on the 26th March ultimo.

I have, &c.,

The Hon. the Colonial Secretary, Wellington. W. B. D. MANTELL.

Computations of Longitude by Signals sent from Sydney to Wellington, New Zealand, 26th March, 1876.

	H.	M.	S.	
No. 1.—	9	29	14·637	Wellington time of receiving Sydney signals.
	9		13·269	Correction for Wellington time.
	9	38	27·906	
	8	4	11·317	Sydney time of sending.
	1	34	16·589	Longitude.
No. 2.—	9	40	35·250	Wellington time of receiving Sydney signals.
	9		13·269	Correction for Wellington time.
	9	49	48·519	
	8	15	31·946	Sydney time of sending.
	1	34	16·573	Longitude.
No. 3.—	10	23	35·619	Wellington time of receiving Sydney signals.
	9		13·669	Correction for Wellington time.
	10	32	48·888	
	9	58	32·331	Sydney time of sending.
	1	34	16·557	Longitude.

	H.	M.	S.	
No. 4.—	10	37	33·500	Wellington time of receiving Sydney signals.
	9	13	13·269	Correction for Wellington time.
	10	46	46·769	
	9	12	30·107	Sydney time of sending.
	1	34	16·662	Longitude.
No. 5.—	10	50	46·344	Wellington time of receiving Sydney signals.
	9	13	13·269	Correction for Wellington time.
	10	59	59·613	
	9	25	42·842	Sydney time of sending.
	1	34	16·771	Longitude.
No. 6.—	11	3	59·081	Wellington time of receiving Sydney signals.
	9	13	13·269	Correction for Wellington time.
	11	13	12·350	
	9	38	55·658	Sydney time of sending.
	1	34	16·692	Longitude.
No. 7.—	11	16	41·833	Wellington time of receiving Sydney signals.
	9	13	13·269	Correction for Wellington time.
	11	25	55·102	
	9	51	38·555	Sydney time of sending.
	1	34	16·547	Longitude.
No. 8.—	11	28	32·550	Wellington time of receiving Sydney signals.
	9	13	13·269	Correction for Wellington time.
	11	37	45·819	
	10	3	29·092	Sydney time of sending.
	1	34	16·727	Longitude.

H. C. Russell,
Government Astronomer.

Sydney Observatory, 26th March, 1876.

Results of Longitude Signals, Wellington, New Zealand, to Sydney, New South Wales.

No. of Series.	Time.
2	1 „ 34 „ 15·281
3	1 „ 34 „ 15·340
4	1 „ 34 „ 15·333
5	1 „ 34 „ 15·388
6	1 „ 34 „ 15·408
7	1 „ 34 „ 15·401
8	1 „ 34 „ 15·349
	1 „ 34 „ 15·3500 Mean Time.

Results of Longitude Signals, Sydney, New South Wales, to New Zealand (Wellington).

No. of Series.	Time.
1	1 „ 34 „ 16·589
2	1 „ 34 „ 16·573
3	1 „ 34 „ 16·557
4	1 „ 34 „ 16·662
5	1 „ 34 „ 16·771
6	1 „ 34 „ 16·692
7	1 „ 34 „ 16·547
8	1 „ 34 „ 16·727
	1 „ 34 „ 16·6398 Mean time.
New Zealand to Sydney	1 „ 34 „ 15·3500
	3 „ 8 „ 31·9898
Mean of both	1 „ 34 „ 15·9949 Longitude.

H. C. Russell,
Government Astronomer.

Sydney Observatory, 26th March, 1876.

Signals from Wellington to Sydney.

No. 2.

Mean of series by New Zealand clock	9 „ 34 „ 52·500
Correction for average time and clock rate combined ...	9 „ 13·269
	9 „ 44 „ 5·769
Mean of signals received on Sydney chronograph ...	8 „ 9 „ 50·488
Longitude	1 „ 34 „ 15·281

No. 3.

Mean of series by New Zealand clock	10 „ 17 „ 30·000
Correction for average time and clock rate combined ...	9 „ 13·269
	10 „ 26 „ 43·269
Mean of signals received on Sydney chronograph ...	8 „ 52 „ 27·929
Longitude	1 „ 34 „ 15·340

No. 4.

Mean series by New Zealand clock	10 „ 30 „ 30·000
Correction for average time and clock rate combined ...	9 „ 13 269
	10 „ 39 „ 43·269
Mean of signals received on Sydney chronograph ...	9 „ 5 „ 27·936
Longitude	1 „ 34 „ 15·333

No. 5.

Mean of series by New Zealand clock	10 „ 44 „ 30·000
Correction for average time and clock rate combined	9 „ 13·269
	10 „ 53 „ 43·269
Mean of signals received on Sydney chronograph	9 „ 19 „ 27·931
Longitude	1 „ 34 „ 15·338

No. 6.

Mean of series by New Zealand clock	10 „ 57 „ 30·000
Correction for average time and clock rate combined	9 „ 13·269
	11 „ 6 „ 43·269
Mean of signals received on Sydney chronograph ...	9 „ 32 „ 27·861
Longitude	1 „ 34 „ 15·408

No. 7.

Mean of series by New Zealand clock	11 „ 10 „ 30·000
Correction for average time and clock rate combined	9 „ 13·269
	11 „ 19 „ 43·269
Mean of signals received on Sydney chronograph ...	94 „ 5 „ 27·868
Longitude	1 „ 34 „ 15·401

No. 8.

Mean of series by New Zealand clock	11 „ 23 „ 30·000
Correction for average time and clock rate combined	9 „ 13·269
	11 „ 32 „ 43·269
Mean of signals received on Sydney chronograph ...	9 „ 58 „ 27·920
Longitude	1 „ 34 „ 15·349

Sydney Observatory, 26th March, 1876.

H. C. Russell,
Government Astronomer.

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