

Adjustments made to 1860–2009 southeastern Australian temperature, rainfall and mean sea level pressure data

This document provides details of the adjustments made to the monthly 1860–2009 Australian Bureau of Meteorology temperature, rainfall and mean sea level pressure (MSLP) data analysed in Ashcroft *et al.* (2012), Gergis and Ashcroft (2013) and Ashcroft *et al.* (2014). Inhomogeneities were identified and adjustments quantified using the RHtestsV3 statistical homogenisation package (Wang and Feng, 2010). Metadata were obtained from the Australian Bureau of Meteorology. The mean adjustments for each month at each station are given for maximum and minimum temperature in Table 1 and Table 2 (1860–1950 only), for rainfall in Table 3 and for MSLP in Table 4. For more details, contact Linden Ashcroft (lindenclaire.ashcroft@urv.cat) or see Ashcroft (2014).

References

Ashcroft, L., 2014. *Extending the instrumental climate record of southeastern Australia. PhD thesis, School of Earth Sciences, The University of Melbourne*, 516 pp.

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Gergis J, Ashcroft L. 2013. A rainfall history of southeastern Australia Part 2: a comparison of documentary, early instrumental and palaeoclimate records, 1788–2008. *International Journal of Climatology* 33(14): 2973–2987, DOI:10.1002/joc.3639.

Wang X L, Feng Y. 2010. *RHtestsV3 User Manual*. Atmospheric Science and Technology Directorate, Science and Technology Branch, Environment Canada, Toronto. <http://etccdi.pacificclimate.org/software.shtml>. Accessed August 15, 2010.

Table 1. Timing and mean size of adjustments made to BoM Observational Network maximum temperature data from 1860–1950, described in Ashcroft *et al.* (2012). The adjustments are the mean difference between the original and adjusted data (°C). Dates of the adjustments (YYYYMM–YYYYMM) are given on the left, as well as the method of identification. If a changepoint is supported by metadata, the metadata are given in the “Reason for Adjustment” column. MXT change refers to a change in the maximum thermometer. SS means changeover to a Stevenson Screen. RH means the changepoint was identified as significant by the RH test, and has no supporting metadata. DTR means that the changepoint was identified in the diurnal temperature range timeseries. “IDed in whole period” (or period 2) means that the changepoint was initially identified in other periods (see Ashcroft *et al.* (2012), and found to be significant when examining period 1 alone. RS means that the changepoint was identified in the second round of adjustments using a reference series. VI means that the changepoint was identified by a visual inspection of the deseasonalised data. If an adjusted period has a (2) next to the dates, this means that the changepoint was identified once in the individual adjustment process, then again in the reference series process. Note that some stations did not have enough highly correlated neighbouring stations for a reference series. These are marked with an asterisk.

Maximum Temperature													
DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ADELAIDE													
188702–189811	RS	0.24	0.30	−0.01	−0.28	−1.02	−1.17	−1.21	−1.13	−1.06	−0.35	−0.03	0.10
189812–191302	RS	0.78	0.78	0.50	0.18	−0.38	−0.67	−0.71	−0.64	−0.54	0.11	0.51	0.67
191303–194401 (2)	site move	1.01	1.06	0.87	0.57	−0.06	−0.30	−0.34	−0.26	−0.20	0.43	0.76	0.93
KAPUNDA													
188501–188904	Greenwich to SS	1.92	1.95	1.99	1.63	0.63	−0.32	−0.38	0.11	0.89	1.59	2.00	1.90
188905–193312 (2)	RH	−0.14	−0.05	−0.39	−0.54	−0.90	−0.97	−0.92	−1.01	−0.90	−0.53	−0.38	−0.22

Table I continued.

Maximum Temperature													
DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
STRATHALBYN													
186101–186608	RH	–0.15	–0.12	–0.14	–0.44	–0.81	–1.23	–1.32	–1.22	–0.84	–0.47	–0.16	–0.19
186609–189005	Glaisher to SS	1.75	1.73	1.65	1.20	0.45	–0.09	–0.22	–0.01	0.50	1.08	1.52	1.73
189006–191106	RS	0.52	0.52	0.14	–0.38	–0.74	–0.91	–0.93	–0.90	–0.78	–0.43	0.14	0.44
191107–191210	MXT change	–0.26	–0.20	–0.44	–1.47	–1.43	–1.74	–1.77	–1.68	–1.66	–1.35	–0.24	–0.90
191211–192308	RS	0.41	0.48	0.26	0.06	–0.20	–0.41	–0.39	–0.36	–0.22	0.00	0.23	0.39
192309–192503	Composite change in 192501	–0.67	0.60	–0.40	–1.25	–1.04	NaN	0.69	–0.69	0.00	–1.28	–1.04	–0.67
MOUNT GAMBIER													
186101–189204	Glaisher to SS	2.45	2.43	2.37	2.04	1.22	0.70	0.65	0.75	1.24	1.84	2.20	2.44
189205–193203	RS	0.91	1.04	1.00	0.77	0.17	–0.11	–0.05	–0.10	0.19	0.63	0.95	0.93
193204–194202	composite change (AC)	1.28	1.20	1.27	1.08	0.65	0.16	0.21	0.22	0.55	0.89	1.29	1.34
ROBE													
188409–189204	Glaisher replaced by SS	0.96	0.99	1.05	1.03	0.65	0.10	0.03	0.04	0.56	0.81	1.10	0.97
189205–191307	MXT change	0.12	0.18	–0.04	–0.41	–0.84	–0.85	–0.78	–0.85	–0.86	–0.57	–0.21	–0.02
191308–191405	RS	0.51	0.16	0.16	0.24	0.05	NaN	NaN	0.17	0.08	0.16	0.07	0.16
191406–191705	screen repaired	–0.18	–0.22	0.14	–0.36	–0.38	–0.28	–0.25	–0.31	–0.37	–0.21	–0.17	0.01
191706–193007	screen repaired	0.10	0.10	0.31	0.12	–0.26	–0.37	–0.30	–0.36	–0.35	–0.13	0.28	0.21
193008–194310	small site move	0.38	0.34	0.40	0.52	0.31	0.20	0.26	0.21	0.20	0.42	0.51	0.40

Table 1 continued.

Maximum Temperature

DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
BOURKE													
187105-187403	RH	-0.48	-0.50	-0.52	-1.48	-1.84	-0.80	-0.89	-0.93	-1.84	-1.58	-0.46	-0.48
187404-190808	SS	3.36	3.27	3.05	1.82	1.51	1.68	1.67	1.67	1.35	2.40	3.16	3.32
190809-194710	Enclosure exposure change	1.71	1.77	1.89	1.09	0.93	0.85	0.81	0.97	0.87	1.54	1.85	1.80
WALGETT													
187808-188603	RH	1.08	1.31	1.54	1.51	1.61	1.04	0.94	1.47	1.42	1.57	1.43	1.12
188604-189609	RH	-0.74	-1.01	-1.38	-2.39	-3.07	-2.33	-2.30	-2.64	-3.04	-1.89	-1.11	-0.79
NARRABRI													
187101-187110	MXT change	-7.97	-7.96	-7.90	-7.59	-7.15	-6.83	-6.77	-6.96	-7.37	-7.78	NaN	NaN
187111-188611	MXT change	1.98	1.91	1.60	0.88	0.07	-0.24	-0.25	-0.04	0.26	0.98	1.56	1.95
188612-189801	MXT change	0.63	0.53	0.35	0.03	-0.29	-0.44	-0.45	-0.39	-0.17	0.18	0.50	0.62
189802-191010	SS	1.49	1.44	1.29	0.99	0.63	0.45	0.44	0.51	0.72	1.03	1.33	1.47
GUNNEDAH													
187612-188210	RH	1.80	2.05	2.10	2.22	2.28	2.69	2.63	2.57	2.28	2.33	2.12	1.80
188211-189808	RS	0.18	-0.01	-0.01	-0.14	-0.82	-1.27	-1.39	-0.90	-0.70	0.02	-0.08	0.08
189809-193103	screen repair	0.77	0.74	0.54	0.60	-0.20	-0.42	-0.47	-0.27	-0.02	0.57	0.70	0.76
193104-194206	thermometers replaced	0.54	0.58	0.58	0.86	0.67	0.77	0.74	0.84	0.62	0.63	0.57	0.58

Table 1 continued.

Maximum Temperature													
DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ARMIDALE													
185712-186209	RH	3.44	3.52	3.89	4.42	4.21	2.70	2.18	3.03	4.41	4.52	4.11	3.59
INVERELL													
187403-188506	MXT change	2.31	2.07	2.06	1.36	0.02	-0.84	-1.20	-0.19	0.34	1.64	2.06	2.20
188507-189011	MXT change	0.43	0.60	0.82	0.41	-1.19	-2.24	-2.37	-1.53	-0.55	0.69	0.70	0.46
189012-189803	Therm screen	-0.67	-0.16	0.74	-0.46	-1.83	-3.05	-3.57	-2.37	-1.67	0.22	0.38	-0.66
189804-190304	RH	5.31	4.98	5.25	4.07	2.47	0.60	0.29	1.55	2.63	3.96	5.38	5.25
190305-190806	SS	2.21	2.42	2.64	2.32	1.33	0.51	0.05	1.18	1.33	2.04	2.59	2.42
190807-192507	RS	1.38	1.40	1.68	1.54	0.40	-0.50	-0.90	-0.27	0.57	1.37	1.46	1.41
YAMBA*													
187706-187904	RH	0.84	0.88	0.97	1.01	0.57	0.72	0.51	0.27	0.37	0.27	1.07	0.98
187905-188108	RH	-0.20	-0.22	-0.19	-0.59	-0.90	-0.89	-0.89	-0.93	-0.85	-0.72	-0.42	-0.28
188109-188311	RH	1.60	1.47	1.64	1.15	1.13	0.69	0.71	0.83	1.13	1.07	0.95	1.29
188312-188605	RH	5.71	5.92	5.65	5.13	4.39	3.47	3.32	3.94	4.86	5.27	5.26	5.50
188606-189810	MXT, thermometer screen change	3.09	3.05	2.97	2.62	1.86	1.41	1.33	1.53	2.08	2.53	2.85	3.05
189811-190803	Possible SS	1.51	1.48	1.42	1.09	0.56	0.37	0.33	0.39	0.68	0.85	1.19	1.38
190804-193609	MXT change (IDed in Per 2)	0.41	0.43	0.29	-0.01	-0.11	-0.06	-0.05	-0.07	-0.11	-0.09	0.05	0.27
193610-194709	Screen painted (IDed in whole period)	0.87	0.88	0.77	0.39	0.41	0.45	0.45	0.44	0.41	0.39	0.46	0.75

Table 1 continued.

Maximum Temperature

DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NEWCASTLE													
186201–186402	DTR	3.43	3.24	3.20	2.62	2.02	1.73	1.67	1.73	2.03	2.36	3.08	3.22
186403–187609	MXT change	0.50	0.51	0.45	0.27	0.00	−0.12	−0.15	−0.10	0.02	0.24	0.33	0.50
187610–188404	MXT change	2.85	2.78	2.75	2.44	2.16	2.00	2.01	2.06	2.20	2.37	2.67	2.83
188405–188809	MXT change	1.19	1.19	1.17	1.00	0.77	0.64	0.62	0.67	0.79	0.99	1.02	1.14
188810–188908	MXT change	0.87	0.78	0.32	−0.39	−0.73	−1.01	−1.27	−1.19	NaN	−0.03	0.60	0.86
188909–189011	MXT change	−2.50	−2.61	−2.80	−4.07	−4.99	−5.18	−5.34	−5.29	−4.58	−3.54	−2.75	−2.45
189012–189808	DTR	0.59	0.60	0.40	−0.27	−0.81	−1.12	−1.19	−1.10	−0.72	−0.10	0.27	0.54
189809–190805	MXT change	1.51	1.48	1.35	1.11	0.78	0.62	0.61	0.64	0.85	1.05	1.32	1.41
BATHURST													
185801–187802	MXT change	2.85	2.86	2.89	2.74	2.20	1.81	1.73	1.90	2.33	2.76	2.86	2.86
187803–188807	RS	1.34	1.36	1.38	1.26	0.73	0.37	0.34	0.53	0.86	1.20	1.37	1.37
188808–190304	RH	2.53	2.53	2.56	2.44	2.01	1.58	1.53	1.64	2.10	2.47	2.55	2.54
190305–190811	SS, composite change	1.37	1.23	0.82	0.13	−0.05	0.03	0.04	−0.02	−0.04	0.31	0.87	1.32
190812–191609	RH	−0.40	−0.38	−0.26	−0.09	−0.05	−0.08	−0.09	−0.07	−0.05	−0.10	−0.27	−0.37
191610–191802	RH	−3.14	−2.81	−2.61	−1.22	−0.39	−0.29	−0.20	−0.23	−0.53	−0.83	−1.72	−3.23

Maximum Temperature

[illegible]

Table 1 continued.

Maximum Temperature													
DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SYDNEY													
185901–186903	Glaisher to large shed	0.43	0.54	0.64	0.81	–0.51	–0.77	–0.67	–0.74	–0.23	0.58	0.74	0.55
186904–191204	RS	0.17	0.17	0.13	–0.04	–1.06	–1.30	–1.31	–1.23	–0.80	–0.06	0.11	0.17
191205–191704	Site move	0.60	0.63	0.63	0.38	–0.63	–0.85	–0.85	–0.75	0.01	0.43	0.61	0.61
191705–192908	RH	0.60	0.62	0.55	0.67	0.26	0.30	0.44	0.26	0.42	0.72	0.65	0.59
WOLLONGONG													
187101–188001	Change to thermometer box	1.02	1.11	0.57	–0.03	–0.51	–0.59	–0.69	–0.56	–0.41	–0.22	0.51	0.48
188002–188611	RH	1.73	2.01	1.72	1.58	1.76	2.00	1.90	1.91	1.77	1.56	1.78	1.26
188612–190809	SS	1.06	1.37	1.11	1.05	0.70	0.33	0.18	0.42	0.84	0.98	1.28	0.61
190810–191611	RH	0.78	1.06	0.81	0.58	–0.17	–0.64	–0.79	–0.42	0.20	0.55	0.99	0.30
191612–191912	RH	2.23	2.51	2.20	1.70	1.45	0.96	0.83	1.10	1.68	2.06	2.25	1.77
192001–192107	MXT change (IDed in whole period)	0.47	0.77	0.33	0.18	0.13	0.03	–0.14	–0.01	0.06	0.11	0.57	0.03
192108–192409	RS	–0.34	–0.06	–0.35	–0.36	–0.27	–0.22	–0.33	–0.22	–0.26	–0.43	–0.18	–0.81
192410–192805	RS	0.44	0.72	0.43	0.42	0.51	0.56	0.45	0.56	0.52	0.35	0.60	–0.03
192806–193710	RS	–0.14	0.14	–0.15	–0.16	–0.07	–0.02	–0.13	–0.02	–0.06	–0.23	0.02	–0.61

Table 1 continued.

Maximum Temperature

DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MOYURA HEADS													
187601–187609	Thermometer screen	5.40	5.40	NaN	NaN	NaN	5.40	NaN	5.40	5.40	NaN	NaN	NaN
187610–189310	RS	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
189311–189703	RS	3.09	3.09	3.09	3.09	3.09	3.09	3.09	3.09	3.09	3.09	3.09	3.09
189704–190811	Stevenson Screen	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13
190812–191805	RS	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
GOULBURN													
185801–186407	MXT change	−0.38	−0.45	−0.49	−0.69	−0.78	−0.81	−0.82	−0.81	−0.77	−0.65	−0.58	−0.44
186408–189001	RH	1.45	1.42	1.36	1.10	0.54	0.22	0.20	0.35	0.70	1.08	1.31	1.43
189002–189502	RH	−0.88	−0.81	−0.63	−0.33	−0.37	−0.50	−0.52	−0.46	−0.36	−0.38	−0.73	−0.94
189503–189812	RH	1.66	1.63	1.46	0.94	−0.33	−0.96	−1.17	−0.74	0.34	1.13	1.56	1.63
189901–191309 (2)	MXT change	−1.20	−1.21	−1.29	−1.57	−1.98	−2.35	−2.38	−2.24	−1.88	−1.51	−1.26	−1.21
191310–191504 (2)	MXT change	−0.99	−1.05	−0.21	−0.73	−1.45	−1.79	NaN	−1.66	−1.18	−0.22	−0.31	−0.90
191505–191701	RS	0.25	0.25	0.18	−0.38	−0.90	−1.10	−1.09	−1.04	−0.80	−0.63	−0.24	0.09
191702–192608	RH	−1.03	−1.01	−1.29	−1.77	−2.10	−2.23	−2.25	−2.20	−2.00	−1.64	−1.25	−0.98

Table 1 continued.

Maximum Temperature													
DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
COOMA													
185801–188807	RS	4.17	4.11	4.05	3.93	3.27	3.10	3.00	3.27	3.42	3.92	4.00	4.09
188808–189403	RS	2.47	2.43	2.39	2.01	1.65	1.23	1.00	1.51	1.69	2.07	2.37	2.41
189404–190801	RH	4.50	4.50	4.35	4.24	3.60	3.17	3.04	3.62	3.73	4.21	4.37	4.47
190802–191601	RH	1.39	1.38	1.44	1.66	0.93	0.42	0.30	0.90	1.11	1.60	1.44	1.43
WAGGA WAGGA													
187111–187604	MXT change	–0.82	–0.91	–1.07	–0.77	–2.07	–1.60	–1.46	–1.70	–2.17	–0.63	–0.77	–1.24
187605–188709	RH	1.73	1.51	0.84	–0.20	–0.61	–0.12	–0.05	–0.25	–0.72	–0.17	0.76	1.45
188710–189003	RS	3.51	3.91	4.43	4.16	1.89	1.14	1.20	1.57	2.92	4.12	4.28	3.70
189004–189604	MXT change	2.43	2.42	2.93	2.11	0.61	–0.17	–0.37	0.08	0.84	2.41	3.06	2.56
189605–190409	RS	3.49	3.56	3.15	2.22	0.44	0.23	–0.01	0.27	0.83	2.30	3.22	3.51
190410–190801	SS	3.00	3.00	2.42	1.68	0.09	–0.18	–0.49	–0.29	0.13	1.33	2.28	3.00
190802–192507	RS	0.18	0.19	0.48	0.38	–0.43	–0.29	–0.33	–0.27	–0.39	0.26	0.46	0.24
192508–192805	RH	–0.70	–0.72	–0.34	–0.62	–1.32	–1.17	–1.16	–1.17	–1.39	–0.53	–0.34	–0.64

Table 1 continued.

Maximum Temperature													
DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
DENILIQUIN													
185803–187904	MXT change	6.50	6.41	5.95	4.26	2.65	1.91	1.80	2.13	3.06	4.34	5.51	6.23
187905–188507	RH	6.22	6.24	5.41	3.85	2.03	1.07	1.08	1.54	2.61	3.76	5.19	5.86
188508–189601	RH	8.23	8.38	7.75	5.87	4.22	3.42	3.19	3.55	4.54	5.89	7.07	7.91
189602–189805	Glaisher replaced by SS	7.57	7.73	6.61	4.84	3.20	2.71	2.56	2.57	3.81	5.46	7.30	7.75
189806–190802	RH	5.95	6.06	5.17	3.87	2.57	1.64	1.60	1.92	2.71	3.93	5.24	5.89
190803–194205 (2)	screen damaged, MXT replaced	3.28	3.29	2.77	1.62	0.47	−0.11	−0.15	0.06	0.71	1.65	2.60	3.13
194206–195002	site move due to building	2.21	2.09	1.71	0.78	0.00	−0.39	−0.44	−0.26	0.32	0.95	1.64	2.09
HAY													
188101–189803	therm screen	2.51	2.50	2.78	2.69	2.11	1.92	1.78	2.14	2.12	2.79	2.86	2.58
189804–190812	possible SS?	1.51	1.51	1.34	1.47	0.80	0.94	0.91	0.86	1.04	1.50	1.46	1.58
MILDURA													
188907–190607	site move, screen change	5.27	5.26	4.96	3.41	1.61	1.34	1.29	1.39	1.49	3.96	5.05	5.17
190608–194608	composite change	2.23	2.27	2.39	1.10	0.29	0.52	0.53	0.46	0.19	1.56	2.30	2.31

Table 1 continued.

Maximum Temperature													
DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ECHUCA													
188106–190009	RH	2.21	2.22	2.48	2.08	1.46	1.72	1.84	1.64	1.53	2.11	2.53	2.34
190010–190102	RS	3.48	3.06	NaN	NaN	NaN	NaN	NaN	NaN	NaN	5.84	5.35	3.07
190103–190206 (2)	MXT change	3.40	2.40	4.26	4.12	3.03	1.91	2.11	2.36	3.02	3.72	2.89	1.70
190207–192307	change of observer, IDed in whole period	1.43	1.44	1.70	1.31	0.61	0.47	0.47	0.48	0.67	1.25	1.61	1.57
192308–193701	possible screen change	−0.37	−0.42	0.16	0.31	0.00	0.19	0.22	0.11	0.03	0.36	0.40	−0.19
193702–193903	site move	0.83	1.05	2.78	2.88	1.79	0.54	0.45	0.94	1.77	3.13	2.80	1.83
OMEO													
187901–188008	RH	6.03	5.78	4.26	1.98	0.85	1.07	1.03	0.92	1.14	1.48	2.60	4.65
188009–188203	RH	7.28	7.32	7.50	7.36	6.90	5.80	5.75	NaN	6.23	7.16	7.53	7.38
188204–188701	RH	4.42	4.43	4.18	3.57	2.59	1.87	1.77	2.17	2.74	3.45	4.08	4.38
188702–189505	MXT change	2.61	2.60	2.43	1.95	1.33	0.86	0.82	1.02	1.47	2.07	2.36	2.54
189506–190211	SS	5.43	5.41	4.68	3.63	2.13	1.25	1.21	1.69	2.77	3.92	5.03	5.48
190212–191412	small site move	2.34	2.33	2.28	2.03	1.48	1.00	0.94	1.17	1.53	1.99	2.25	2.32
191501–194209	IDed in whole period	1.52	1.54	1.45	1.24	0.94	0.74	0.72	0.80	1.01	1.23	1.39	1.51

Maximum Temperature

[illegible]

Table 1 continued.

Maximum Temperature		REASON FOR ADJUSTMENT											
DATES		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
BALLARAT													
187907–188903	RH	3.18	3.17	2.63	2.55	1.92	1.58	1.49	1.88	1.89	2.40	2.51	2.78
188904–190004	RS	2.42	2.59	1.80	0.60	0.16	–0.08	–0.34	–0.01	0.11	0.60	1.37	2.08
190005–190801	DTR	2.99	2.84	2.03	1.31	0.57	0.34	0.18	0.50	0.58	1.15	2.01	2.59
190802–192303	MXT change	1.49	1.47	1.22	0.90	0.59	0.51	0.53	0.53	0.61	0.81	1.15	1.33
CAPE OTWAY													
186404–189807	Alterations to thermometer shed	3.22	3.23	3.05	2.59	1.94	1.59	1.37	1.69	1.94	2.44	2.67	2.97
189808–190803	RH	2.46	2.43	1.96	1.75	1.19	0.25	0.29	0.28	0.64	1.55	2.09	2.07
PORTLAND													
186301–190102	Temporary site move to lighthouse	2.63	2.65	2.70	2.74	2.26	2.10	2.08	2.11	2.22	2.53	2.78	2.78
190103–191910	Site move	0.54	0.53	0.60	0.77	0.69	0.56	0.55	0.54	0.59	0.72	0.69	0.58
191911–192305	RS	1.59	1.06	1.48	1.61	1.09	0.58	0.53	0.47	1.08	1.56	1.95	1.61
192306–194102	Site move	0.89	0.79	0.90	1.17	1.01	0.79	0.78	0.80	0.91	1.14	1.21	1.07

Table 1 continued.

Maximum Temperature													
DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
HAMILTON													
188601–188610	DTR	–2.24	–2.23	–2.14	–1.68	–1.02	–0.47	–0.55	–0.74	–1.96	–1.35	NaN	NaN
188611–192305	RH DTR	1.70	1.71	1.53	1.13	0.68	0.44	0.41	0.47	0.69	1.02	1.38	1.59
192306–193208	RS	0.14	0.14	0.12	0.02	–0.09	–0.15	–0.16	–0.15	–0.09	–0.01	0.06	0.12
193209–193908	Screen painted white after being green	0.95	0.96	0.94	0.82	0.75	0.66	0.65	0.67	0.72	0.80	0.89	0.92

Table 2. Timing and mean size of adjustments made to BoM Observational Network minimum temperature data from 1860–1950 described in Ashcroft *et al.* (2012). Adjustments are the mean difference between the original and adjusted data (°C). Dates of the adjustments (YYYYMM–YYYYMM) are given on the left, as well as the method of identification. If a changepoint is supported by metadata, the metadata are given in the “Reason for Adjustment” column. MNT change refers to a change in the minimum thermometer. SS means changeover to a Stevenson Screen. RH means the changepoint was identified as significant by the RH test, and has no supporting metadata. DTR means that the changepoint was identified in the diurnal temperature range timeseries. “IDed in whole period” (or period 2) means that the changepoint was initially identified in other periods, and found to be significant when examining period 1 alone. RS means that the changepoint was identified in the second round of adjustments using a reference series. VI means that the changepoint was identified by a visual inspection of the deseasonalised data. If an adjusted period has a (2) next to the dates, this means that the changepoint was identified once in the individual adjustment process, then again in the reference series process. Note that some stations did not have enough highly correlated neighbouring stations for a reference series. These are marked with an asterisk.

Minimum temperature

Dates	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ADELAIDE													
188702–194401	site move	0.90	0.93	0.79	0.73	0.41	0.31	0.28	0.31	0.35	0.50	0.83	0.84
KAPUNDA*													
188101–192401	MNT change	0.07	0.08	0.06	0.02	–0.02	–0.04	–0.05	–0.05	–0.03	0.00	0.04	0.07
192402–192501	MNT change	–1.28	–1.28	–1.26	–0.90	–0.78	–0.54	–0.52	–0.59	–0.67	–1.02	–1.12	–1.20
STRATHALBYN													
186101–186212	DTR	0.79	0.77	0.78	0.89	1.11	0.80	0.86	0.74	0.94	0.98	0.89	0.78
186301–186909	RH	0.07	0.09	–0.02	–0.33	–0.50	–0.66	–0.75	–1.08	–0.62	–0.11	–0.09	–0.01
186910–189010	RH	1.22	1.20	1.08	1.00	1.05	0.98	0.87	0.91	0.99	1.07	1.00	1.11
189011–192501	composite change	0.62	0.64	0.51	0.33	0.24	0.24	0.25	0.25	0.24	0.27	0.39	0.54

Table 2 continued.

Minimum temperature		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Dates	REASON FOR ADJUSTMENT												
WILCANNIA*													
188101–188112	DTR	3.19	3.19	3.09	3.17	3.01	2.92	2.91	2.94	2.97	3.05	3.13	3.19
188201–188712	RH	7.70	7.91	8.20	8.36	8.55	8.61	8.64	8.63	8.52	8.04	7.72	7.65
188801–189106	RH	2.49	2.49	2.42	2.27	2.10	2.03	1.99	2.00	2.08	2.20	2.36	2.46
189107–189307	RH	–1.70	–1.70	–1.71	–1.80	–1.84	–1.87	–1.86	–1.84	–1.79	–1.76	–1.73	–1.72
189308–189601	MNT change	2.35	2.34	2.17	1.66	1.23	1.20	1.04	1.08	1.33	1.77	1.96	2.28
189602–189812	DTR	–0.10	–0.05	–0.24	–0.62	–0.94	–1.04	–1.04	–1.02	–0.76	–0.44	–0.23	–0.08
189901–194001	Composite change to AWAP	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.06	1.06	1.07	1.07	1.07
COBAR*													
188103–188805	RH	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
188806–189004	MNT change	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
189005–192307	RH	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
192308–193703	MNT stops reading low	–0.85	–0.85	–0.63	–0.85	–0.85	–0.85	–0.85	–0.85	–0.85	–0.85	–0.85	–0.85

Table 2 continued.

[illegible]

Table 2 continued.

Minimum temperature													
Dates	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NARRABRI													
187111–188201	RH	2.46	2.43	2.35	2.07	1.81	1.71	1.67	1.69	1.83	2.04	2.24	2.41
188202–188504	RH	–2.49	–2.47	–2.32	–1.44	–0.77	–0.38	–0.26	–0.35	–0.54	–1.15	–1.77	–2.38
188505–190004	IDed in whole period	1.08	1.07	0.97	0.80	0.60	0.51	0.48	0.50	0.60	0.78	0.96	1.05
190005–190106	IDed in whole period	NaN	–4.28	–4.25	–4.23	–4.21	–4.15	–4.14	–4.15	–4.18	NaN	–4.29	–4.27
190107–191010	SS	0.32	0.31	0.21	–0.02	–0.26	–0.39	–0.44	–0.40	–0.26	–0.02	0.20	0.30
191011–193311	MNT issues	0.77	0.77	0.75	0.73	0.70	0.69	0.68	0.69	0.70	0.72	0.75	0.76
193312–193604	MNT issues	–1.50	–1.43	–1.34	–1.12	–0.85	–0.80	–0.80	–0.86	–0.98	–1.19	–1.44	–1.52
GUNNEDAH													
187612–187910	DTR	–0.03	–0.03	–0.18	–2.15	–1.14	–0.41	–0.51	–0.54	–1.96	–2.11	–1.24	0.00
187911–188206	RH	–3.65	–3.59	–3.19	–3.10	–3.55	–4.40	–4.56	–3.91	–3.47	–3.45	–3.09	–3.59
188207–189812	RH	2.43	2.49	3.00	3.30	2.53	2.51	2.58	2.51	2.57	3.25	3.22	2.66
189901–192506	RS	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92

Table 2 continued.

Minimum temperature

Dates	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ARMIDALE													
185712–186201	RH	–4.95	–5.30	–4.94	–4.02	–4.28	–4.52	–4.60	–4.47	–4.38	–4.08	–4.15	–4.78
186202–187805	RH	–0.08	–0.07	–0.02	–0.04	–0.55	–0.88	–0.96	–1.00	–0.41	–0.10	0.01	–0.06
187806–188108	MNT change	–5.36	–5.63	–5.59	–5.47	–5.26	–5.43	–5.42	–5.37	–5.40	–5.75	–5.44	–5.76
188109–189101	MNT change	0.21	0.19	0.54	0.72	0.61	0.45	0.37	0.43	0.66	0.73	0.60	0.33
189102–190807(2)	SS	–1.76	–1.73	–1.41	–1.19	–1.72	–1.89	–2.07	–1.99	–1.68	–1.22	–1.16	–1.53
190808–194303	RS	–1.37	–1.31	–1.00	–0.79	–1.00	–1.12	–1.15	–1.15	–1.03	–0.81	–0.87	–1.16
194304–194904	New screen	–1.88	–2.07	–1.62	–1.49	–1.70	–1.78	–1.82	–1.80	–1.71	–1.53	–1.47	–1.91
194905–194909	New screen	NaN	NaN	NaN	NaN	–1.15	–1.15	–1.16	–1.15	–1.15	NaN	NaN	NaN
INVERELL													
187403–188409	RH	0.10	–0.27	–0.84	–3.26	–4.94	–5.66	–5.75	–5.72	–4.74	–3.33	–1.83	–0.33
188410–189803	Therm screen	1.96	1.76	0.82	–0.83	–2.00	–2.20	–2.41	–2.36	–1.92	–0.89	0.51	1.45
189804–190808	SS	–1.78	–1.83	–3.15	–5.07	–5.99	–5.95	–5.87	–5.94	–5.94	–5.32	–3.75	–2.20
190809–194909	Building near enclosure	–0.85	–1.04	–1.87	–3.74	–4.27	–4.28	–4.26	–4.27	–4.31	–3.81	–2.37	–1.18

Table 2 continued.

Minimum temperature

Dates	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
YAMBA													
187706–188108	RH	1.49	1.52	1.46	1.22	0.86	0.59	0.61	0.72	0.94	1.05	1.33	1.47
188109–189809	Therm screen, MNT change	0.51	0.52	0.41	0.17	-0.29	-0.46	-0.50	-0.47	-0.27	-0.01	0.23	0.44
189810–190905	RH	-0.69	-0.69	-0.78	-1.14	-1.53	-1.71	-1.75	-1.73	-1.56	-1.30	-1.00	-0.77
190906–193307	IDed in whole period	0.03	0.02	-0.05	-0.29	-0.58	-0.71	-0.74	-0.74	-0.58	-0.40	-0.19	-0.04
193308–193408	IDed in period 2	-2.15	-2.09	-2.26	-2.99	-3.57	-4.18	-4.01	-3.97	-3.28	-2.70	-2.45	-2.09
193409–194907	RH	-0.33	-0.31	-0.39	-0.88	-1.26	-1.52	-1.56	-1.52	-1.36	-1.00	-0.63	-0.43
NEWCASTLE													
186201–188404	MNT change	-0.62	-0.65	-0.74	-0.85	-0.93	-1.16	-1.38	-1.20	-0.99	-0.84	-0.87	-0.81
BATHURST													
185802–187310	RS	0.89	0.77	0.84	0.51	0.11	-0.04	0.01	-0.07	0.18	0.44	0.73	0.88
187311–189006	RH	1.99	2.06	2.09	1.80	1.42	1.23	1.29	1.28	1.47	1.66	1.95	2.10
189007–189204	RS	0.89	0.82	0.83	0.96	0.44	0.96	0.71	0.47	0.98	1.00	0.98	1.01
189205–189307	RS	-0.30	-0.26	-0.32	-0.30	-0.71	-0.54	-0.38	-0.58	-0.61	-0.33	-0.35	-0.33
189308–191709	RS	1.29	1.33	1.48	1.48	1.25	1.24	1.27	1.16	1.39	1.48	1.48	1.42
191710–192604	MNT change	2.13	1.99	2.25	2.19	2.05	1.91	2.10	1.85	2.11	2.20	2.22	2.18

Table 2 continued.

Minimum temperature

Dates	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
COONABARABRAN													
187904–189501	RH	–0.33	–0.29	–0.47	0.05	–0.12	–0.31	–0.49	–0.36	–0.11	0.04	–0.49	–0.46
189502–189808	MNT change	–2.07	–2.24	–2.87	–4.03	–4.13	–4.02	–3.40	–3.73	–4.12	–4.00	–3.05	–2.34
189809–191205	RH	–0.35	–0.40	–0.39	–0.36	–0.60	–0.68	–0.81	–0.78	–0.54	–0.36	–0.37	–0.45
191206–191504	MNT change, therm screen	1.79	1.73	1.31	0.99	0.90	0.33	0.47	0.57	0.47	0.98	1.18	1.65
191505–192001	RS	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
192002–192405	RS	–0.99	–0.99	–0.99	–0.99	–0.99	–0.99	–0.99	–0.99	–0.99	–0.99	–0.99	–0.99
DUBBO													
187203–187309	site move	0.80	0.83	0.53	0.29	2.46	0.91	3.45	3.00	0.80	0.25	0.72	0.83
187310–187501	RH	–4.40	–3.51	–3.01	–2.37	–4.03	–4.92	–5.08	–4.56	–3.42	–2.18	–2.54	–4.11
187502–188412	MNT change	3.25	3.24	3.21	3.01	2.63	2.32	2.30	2.40	2.65	2.95	3.16	3.22
188501–192111	site move	0.38	0.36	0.28	0.12	–0.05	–0.12	–0.17	–0.16	–0.07	0.07	0.25	0.34
192112–192905	site move	–0.79	–0.82	–0.73	–0.52	–0.33	–0.26	–0.23	–0.25	–0.32	–0.47	–0.63	–0.78
FORBES													
187304–187703	MNT change	1.25	1.09	0.51	0.20	–0.47	–0.51	–0.48	–0.40	–0.63	–0.07	0.21	0.86
187704–193904	site move	1.35	1.34	1.32	1.42	0.98	0.90	0.83	0.90	0.99	1.39	1.40	1.25

Table 2 continued.

Minimum temperature		REASON FOR ADJUSTMENT											
Dates		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SYDNEY													
185901–186603	RH	–0.57	–0.54	–0.44	–0.32	–0.47	–0.42	–0.54	–0.42	–0.50	–0.46	–0.28	–0.30
186604–191910	RS	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
WOLLONGONG*													
187101–187601	MNT change	–1.46	–1.62	–1.22	–1.19	–1.34	–2.09	–2.11	–2.03	–1.51	–1.35	–1.22	–1.26
187602–188001	Therm box	–1.40	–1.58	–1.21	–0.27	–0.32	–0.97	–0.79	–0.79	–0.16	–0.39	–0.60	–0.93
188002–188412	MNT change	–2.56	–2.71	–2.41	–2.47	–2.30	–2.62	–2.41	–2.48	–2.21	–2.61	–2.53	–2.45
188501–188603	MNT change	–0.37	–0.21	0.75	0.96	0.32	–0.57	–0.48	–0.23	0.69	0.63	0.92	0.03
188604–188708	MNT change	0.04	–0.19	0.18	–0.57	–1.11	–0.51	–0.65	–0.64	–0.84	–1.39	–0.63	–0.06
188709–189307	IDed in whole period	–2.95	–3.13	–2.69	–2.30	–2.09	–2.51	–2.38	–2.40	–2.04	–2.47	–2.61	–2.74
189308–192710	Change of observer	–1.08	–1.25	–0.82	–0.69	–0.55	–1.05	–0.91	–0.94	–0.53	–0.81	–0.80	–0.86
192711–192902	MNT issues sorted out	0.08	–0.20	0.47	0.85	1.31	0.86	1.06	1.10	1.46	1.14	1.18	0.86
192903–194001	RH	–0.75	–0.90	–0.49	–0.23	–0.05	–0.54	–0.39	–0.42	–0.04	–0.35	–0.37	–0.46
194002–194204	RH	–2.02	–2.14	–1.71	–1.45	–1.04	–1.49	–1.33	–1.36	–0.98	–1.33	–1.29	–1.82

Table 2 continued.

Minimum temperature

Dates	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MORUYA HEADS													
187601–189710	MNT change therm stand	0.41	0.41	0.23	-0.87	-1.74	-2.00	-2.10	-2.08	-1.83	-1.42	-0.68	0.01
189711–190407	MNT change	-1.79	-1.77	-1.87	-2.43	-3.13	-3.26	-3.44	-3.40	-2.98	-2.63	-2.10	-1.85
190408–190811	SS	-0.53	-0.56	-0.81	-1.65	-2.45	-2.73	-2.78	-2.77	-2.70	-2.44	-1.68	-1.03
190812–193210	MNT change?	0.72	0.80	0.42	-0.43	-1.01	-1.19	-1.22	-1.22	-1.12	-0.82	-0.28	0.41
193211–194909	MNT issues	0.19	0.24	-0.09	-1.16	-1.68	-1.82	-1.83	-1.83	-1.80	-1.50	-0.83	-0.18
GOULBURN													
185801–188805		1.21	1.16	1.09	1.34	1.12	1.06	1.04	1.01	1.07	1.47	1.12	1.06
188806–189806		1.34	1.36	1.40	1.36	1.36	1.19	1.45	1.32	1.14	1.33	1.35	1.38
189807–193905		0.34	0.35	0.50	0.82	0.56	0.60	0.64	0.65	0.55	0.85	0.66	0.48
COOMA													
185802–187202	RH	0.63	0.58	0.24	-0.92	-1.85	-2.45	-2.61	-2.52	-1.86	-1.01	-0.25	0.43
187203–188609	RH	-0.34	-0.33	-0.57	-1.69	-2.82	-3.23	-3.43	-3.28	-2.72	-1.82	-1.00	-0.65
188610–189007	RH	2.41	2.40	1.84	1.01	-0.38	-0.55	-0.90	-0.91	-0.49	0.49	1.61	2.37
189008–191005	RH	0.40	0.38	0.09	-0.76	-1.70	-1.89	-2.04	-1.96	-1.52	-0.87	-0.14	0.22
191006–194602	RH	1.18	1.16	0.83	0.01	-0.83	-1.18	-1.27	-1.20	-0.75	-0.10	0.58	1.01
194603–195002	RH	0.30	0.38	0.07	-0.92	-2.01	-2.18	-2.54	-2.53	-1.84	-1.03	-0.31	0.34

Table 2 continued.

Minimum temperature

Dates	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
WAGGA WAGGA													
187105–187405	DTR	2.39	2.30	1.76	1.15	1.15	1.19	1.30	1.25	1.13	1.04	1.26	1.99
187406–188201	RH	1.36	1.34	0.86	-0.03	-0.02	-0.21	-0.27	-0.12	0.02	-0.04	-0.03	0.47
188202–188703	MNT change	-0.69	-0.71	-0.95	-1.40	-2.25	-2.46	-2.68	-2.26	-1.76	-1.36	-1.02	-0.86
188704–188902	RH	-2.62	-3.07	-4.24	-4.30	-4.18	-3.78	-3.81	-3.95	-4.72	-4.57	-3.59	-2.73
188903–189406	MNT change	-0.78	-0.78	-0.80	-0.68	-0.62	-0.59	-0.71	-0.64	-0.56	-0.64	-0.77	-0.80
189407–191504	MNT change (IDed in period 2)	0.76	0.77	0.61	0.32	0.06	-0.01	-0.05	-0.03	0.08	0.27	0.50	0.69
191505–191812	MNT change (IDed in period 2)	-1.80	-2.01	-2.51	-1.70	-0.66	-0.52	-0.51	-0.80	-1.34	-2.10	-2.76	-2.14
DENILIQUIN													
186703–187104	MNT change	-1.76	-1.51	-1.16	-0.51	-0.51	-0.54	-0.42	-0.47	-0.62	-0.53	-1.16	-1.18
187105–189606	RS	-1.91	-2.02	-2.23	-2.38	-2.46	-2.57	-2.77	-2.66	-2.47	-2.40	-2.47	-2.22
189607–189805	Glaisher stand replaced by SS	-0.89	-0.60	-1.32	-1.32	-1.47	-1.36	-1.57	-1.67	-1.39	-1.35	-1.31	-0.99
189806–190103	RS	-0.10	0.04	-0.19	-0.32	-0.47	-0.49	-0.82	-0.65	-0.42	-0.31	-0.29	-0.04
190104–190710	RH	-0.87	-0.98	-1.13	-1.18	-1.40	-1.58	-1.65	-1.65	-1.42	-1.24	-1.12	-1.04

Table 2 continued.

Minimum temperature

Dates	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
HAY													
188101–188110	RH	–6.04	–6.03	–5.76	–4.85	–4.58	–4.31	–4.40	NaN	NaN	NaN	NaN	NaN
188111–190211	RS	–0.49	–0.50	–0.59	–0.80	–1.04	–1.13	–1.18	–1.14	–1.03	–0.83	–0.64	–0.52
190212–190905	RH	–1.39	–1.46	–1.53	–1.75	–1.98	–2.08	–2.09	–2.09	–2.03	–1.81	–1.56	–1.45
190906–193908	MNT issues	–0.26	–0.26	–0.27	–0.30	–0.33	–0.34	–0.35	–0.34	–0.33	–0.31	–0.28	–0.27
193909–194701	MNT issues	–0.93	–0.93	–0.93	–0.94	–0.94	–0.95	–0.95	–0.95	–0.94	–0.94	–0.93	–0.93
MILDURA*													
188907–189006	RH	2.86	2.86	2.68	1.97	1.70	1.26	1.08	1.13	1.45	2.24	2.49	2.80
189007–190305	observations taken elsewhere	0.46	0.47	0.43	0.34	0.26	0.24	0.22	0.24	0.29	0.35	0.42	0.47
190306–190411	RH	–4.30	–4.31	–4.38	–4.33	–4.47	–4.54	–4.56	–4.53	–4.50	–4.36	–4.33	–4.30
ECHUCA													
188106–188404	RH	1.35	1.37	1.28	1.03	0.79	0.68	0.65	0.71	0.80	0.99	1.21	1.32
188405–188502	RH	–0.10	–0.11	NaN	NaN	–0.98	–1.18	–1.38	–1.31	–0.74	–0.51	–0.31	–0.17
188503–189809	Observer change (DTR)	2.45	2.43	2.36	2.06	1.74	1.66	1.59	1.66	1.79	2.03	2.22	2.42
189810–189907	RS	1.48	1.53	1.50	1.38	1.04	1.03	0.99	NaN	NaN	1.10	1.10	1.50
189908–190006	RS	–1.72	–1.76	–1.92	–2.10	–2.18	–2.18	NaN	–2.19	–2.16	–2.17	–1.87	–1.82
190007–192307	Observer change	1.80	1.81	1.72	1.56	1.41	1.32	1.29	1.31	1.39	1.54	1.69	1.77
192308–193904 (2)	Site move	0.44	0.45	0.43	0.35	0.27	0.23	0.23	0.23	0.26	0.32	0.38	0.43

Table 2 continued.

Minimum temperature

Dates	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
OMEO													
187904-191412	site move	-0.85	-0.86	-0.92	-0.99	-0.84	-0.79	-0.80	-0.76	-0.88	-1.00	-0.97	-0.90
191501-192911	RS	-0.42	-0.42	-0.49	-0.51	-0.21	-0.03	0.07	0.07	-0.31	-0.51	-0.52	-0.44
192912-193509	site move	-0.93	-0.95	-0.94	-0.98	-0.69	-0.45	-0.40	-0.52	-0.80	-0.96	-1.02	-0.97
193510-193808	reading issues?	-2.17	-2.19	-2.12	-2.58	-2.57	-2.46	-2.41	-2.42	-2.32	-2.48	-2.23	-2.29
GABO ISLAND*													
187702-188302	RH	-0.83	-0.82	-0.83	-0.91	-1.09	-1.21	-1.23	-1.21	-1.14	-1.09	-0.98	-0.91
188303-188406	RH	-2.97	-2.96	-2.97	-2.90	-2.65	-2.53	-2.46	-2.47	-2.52	-2.75	-2.81	-2.91
188407-188607	RH	-6.51	-6.51	-6.51	-6.51	-6.50	-6.49	-6.48	-6.49	-6.49	-6.50	-6.50	-6.51
188608-189403	RH	-0.12	-0.12	-0.14	-0.23	-0.36	-0.45	-0.50	-0.49	-0.46	-0.39	-0.28	-0.18
189404-189501	RH	-2.81	NaN	NaN	-2.79	-2.60	-2.53	-2.40	-2.42	-2.46	-2.68	-2.75	-2.81
189502-189705	SS	-3.76	-3.75	-3.75	-3.79	-3.88	-3.92	-3.94	-3.92	-3.92	-3.85	-3.84	-3.77
189706-190201	RH	-1.12	-1.12	-1.12	-1.11	-1.10	-1.10	-1.10	-1.10	-1.10	-1.10	-1.11	-1.12
WILSONS PROMONTORY*													
188703-189108	MNT change	-0.15	-0.13	-0.14	-0.21	-0.40	-0.57	-0.65	-0.64	-0.58	-0.49	-0.35	-0.22
189109-189301	MNT change	-1.96	-1.76	-1.75	-1.84	-2.25	-2.14	-1.50	-1.61	-1.63	-2.12	-2.12	-1.90
189302-190003	RH	0.13	0.23	0.12	-0.08	-0.47	-0.70	-0.86	-0.85	-0.79	-0.64	-0.47	-0.07
190004-190712	RH	-2.08	-2.11	-2.08	-1.93	-1.87	-2.14	-2.33	-2.31	-2.20	-2.01	-1.92	-1.97

Minimum temperature

[illegible]

Table 2 continued.

Minimum temperature

Dates	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CAPE OTWAY													
186404–186501	RH	–0.40	NaN	NaN	–0.40	–0.23	0.47	0.63	0.58	0.31	0.12	–0.07	–0.34
186502–186511	RH	NaN	–0.41	–0.42	–0.52	–1.06	–1.44	–2.46	–2.36	–2.14	–1.82	–0.74	NaN
186512–186609	RH	–3.26	–3.25	–3.63	–3.44	–3.85	–4.06	–4.43	–4.38	–4.25	NaN	NaN	–3.32
186610–186707	RH	–5.60	–5.66	–5.66	–5.29	–5.07	–4.67	–4.49	NaN	NaN	–4.86	–4.54	–5.47
186708–188805	RH	0.13	0.13	0.12	0.03	–0.17	–0.34	–0.41	–0.39	–0.35	–0.23	–0.09	0.05
188806–189703	MNT change	0.80	0.82	0.80	0.63	0.39	0.23	0.13	0.15	0.19	0.38	0.57	0.71
189704–190007	Possible SS installation	1.84	1.83	1.79	1.37	0.73	0.57	0.31	0.46	0.60	1.07	1.42	1.72
190008–190203	Site visit by Barrachi	–0.58	–0.59	–0.55	–0.79	–0.85	–1.12	–1.15	–1.14	–1.00	–1.00	–0.87	–0.63
190204–191705	RH	0.44	0.45	0.42	0.31	0.15	0.00	–0.03	0.00	0.02	0.13	0.25	0.36
191706–192806	MNT change (IDed in whole period)	0.96	0.99	0.97	0.90	0.76	0.61	0.58	0.57	0.62	0.70	0.79	0.92
192807–194301	possible small site move	0.44	0.45	0.45	0.41	0.36	0.27	0.26	0.26	0.28	0.32	0.37	0.41
PORTLAND													
186301–186310	RH	0.17	0.19	–0.08	–0.61	–1.39	–4.00	–3.22	–4.78	–4.54	–2.31	NaN	NaN
186311–192410	site move in 1931 (data gap)	0.40	0.40	0.39	0.34	0.28	0.25	0.23	0.24	0.25	0.29	0.34	0.38
192411–193506	site move	–0.20	–0.19	–0.19	–0.16	–0.11	–0.07	–0.06	–0.07	–0.09	–0.11	–0.16	–0.19
193507–193703	site move	–0.37	–0.26	–0.30	–0.85	–1.35	–1.34	–1.29	–1.12	–1.15	–0.84	–0.66	–0.36
193704–193908	site move	0.63	0.61	0.61	0.42	0.07	–0.33	–0.44	–0.32	–0.23	0.12	0.43	0.47

Table 3. Timing and mean size of adjustments made to BoM Observational Network rainfall data from 1860–2009, employed by Gergis and Ashcroft (2013) and Ashcroft *et al.* (2014). Adjustment values are ratios of adjusted data/original data. Dates of the adjustments (YYYYMM–YYYYMM) are given on the left, as well as the method of identification. If a changepoint is supported by metadata, the metadata is given in the “Reason for Adjustment” column. RH mean the changepoint was identified as significant by the RH test, and has no supporting metadata. RS means that the changepoint was identified in the second round of adjustments using a reference series. VI means that the changepoint was identified by a visual inspection of the deseasonalised data. If an adjusted period has a (2) next to the dates, this means that the changepoint was identified once in the individual adjustment process, then again in the reference series process.

DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
STRATHALBYN													
186101–187604	RS	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
MOUNT GAMBIER													
186008–186205	RS	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
186206–188804	RS	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
188805–191902	RS	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
191903–193912	Raingauge replaced	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
194001–196101	RS, but several observers during this time	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PENOLA													
186101–188101	RS	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
ROBE													
186008–191401	New observer around this time	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12

[illegible]

Table 4. Timing and mean size of adjustments made to BoM Observational Network pressure data from 1860–2009, analysed in Ashcroft *et al.* (2014). Adjustment values are the mean monthly differences between the original and adjusted data (hPa). Dates of the adjustments (YYYYMM–YYYYMM) are given on the left, as well as the method of identification. If a changepoint is supported by metadata, the metadata is given in the “Reason for Adjustment” column. RH means the changepoint was identified as significant by the RH test, and has no supporting metadata. RS means that the changepoint was identified in the second round of adjustments using a reference series. VI means that the changepoint was identified by a visual inspection of the deseasonalised data. If an adjusted period has a (2) next to the dates, this means that the changepoint was identified once in the individual adjustment process, then again in the reference series process.

DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ROBE													
188409–190603	RS	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
190604–191806	RS	–0.88	–0.88	–0.88	–0.88	–0.88	–0.88	–0.88	–0.88	–0.88	–0.88	–0.88	–0.88
191807–192411	RS	–0.32	–0.32	–0.32	–0.32	–0.32	–0.32	–0.32	–0.32	–0.32	–0.32	–0.32	–0.32
192412–194408	RS/ New barometer in October- Also in Alexander et al. (2010).	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17
194409–197602	RS	–0.45	–0.45	–0.46	–0.46	–0.46	–0.46	–0.46	–0.46	–0.46	–0.46	–0.45	–0.45
BOURKE													
189204–190603	RS	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
190604–194002	RS	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
194003–194403	RS	–0.34	–0.36	–0.34	–0.38	–0.38	–0.38	–0.38	–0.38	–0.38	–0.36	–0.35	–0.34
194404–194811	RS	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
194812–195101	RS	–0.97	–0.97	–0.97	–0.97	–0.97	–0.97	–0.97	–0.97	–0.97	–0.97	–0.97	–0.97
195102–196103	RS	–0.16	–0.16	–0.16	–0.16	–0.16	–0.16	–0.16	–0.16	–0.16	–0.16	–0.16	–0.16
196104–196405	RS	–1.07	–1.07	–1.07	–1.07	–1.07	–1.07	–1.07	–1.07	–1.07	–1.07	–1.07	–1.07

[illegible]

Table 4 continued.

DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
BATHURST													
185802–186003	RH	-2.47	-3.02	-4.47	-3.60	-4.23	-4.32	-4.35	-4.14	-3.39	-4.47	-4.07	-2.84
186004–187104	RH	2.95	2.96	3.02	2.77	2.67	2.65	2.59	2.60	2.75	2.92	2.95	2.95
187105–188005	RH	-0.35	-0.40	-0.60	-0.73	-0.66	-0.75	-0.75	-0.74	-0.62	-0.55	-0.35	-0.34
188006–190508	RS	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
190509–191302	RS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
191303–191605	RS	-2.40	-2.40	-2.40	-2.40	-2.40	-2.40	-2.40	-2.40	-2.40	-2.40	-2.40	-2.40
191606–192012	RS	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
192101–193208	RS	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20

Table 4 continued.

DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FORBES													
187304-187612	RH	-5.36	-5.36	-6.02	-6.13	-6.16	-6.28	-6.77	-6.18	-6.19	-6.02	-5.19	-5.49
187701-187912	RH	-1.75	-1.51	-1.55	-1.00	-1.76	-0.11	0.42	-0.53	-0.45	-1.61	-0.27	-0.11
188001-188710	RH	-6.79	-6.77	-6.44	-6.67	-6.64	-6.66	-6.61	-6.62	-6.52	-6.64	-6.58	-7.00
188711-189203	RH	-3.38	-3.56	-3.97	-4.00	-3.82	-3.68	-3.98	-3.95	-4.23	-3.78	-3.58	-3.41
189204-190308	RS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
190309-190712	RS	-8.40	-8.40	-8.40	-8.40	-8.40	-8.40	-8.40	-8.40	-8.40	-8.40	-8.40	-8.40
190801-190912	RS/ New barometer in October	-7.20	-7.20	-7.20	-7.20	-7.20	-7.20	-7.20	-7.20	-7.20	-7.20	-7.20	-7.20
191001-192706	RS/ New barometer in March	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
192707-194002	RS/ recorded barometer issues	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90
194003-194504	RS/ New barometer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
194505-194701	RS	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
194702-194803	RS	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
194804-195112	RS/ Site move	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
SYDNEY													
185901-188401	RH	-1.14	-1.24	-1.51	-1.46	-1.41	-1.43	-1.39	-1.46	-1.36	-1.31	-1.15	-1.07
188402-190609	RS	0.01	0.00	-0.25	-0.22	-0.22	-0.20	-0.17	-0.20	-0.20	-0.14	-0.03	-0.02
190610-192111	RS/ Site move in 1922	-0.84	-0.94	-0.98	-1.02	-1.02	-0.96	-1.04	-0.93	-0.98	-0.90	-0.90	-0.80
192112-195403	RS	-1.32	-1.34	-1.53	-1.51	-1.41	-1.53	-1.54	-1.51	-1.55	-1.49	-1.34	-1.29
195404-199111	RS/ Site move	-0.44	-0.43	-0.72	-0.70	-0.60	-0.64	-0.59	-0.60	-0.63	-0.59	-0.49	-0.43
199112-199303	RH/ change to AWS	-1.24	-1.26	-1.45	-1.20	-1.71	-1.17	-1.69	-1.24	-1.27	-1.40	-1.27	-1.26

Table 4 continued.

DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
DENILIQUIN													
185909-186312	RH	-7.00	-6.89	-5.44	-5.59	-5.75	-5.83	-5.40	-5.72	-5.85	-6.21	-6.03	-7.05
186401-188006	RH	-2.15	-2.06	-2.00	-2.04	-2.03	-1.98	-1.92	-1.97	-1.94	-2.09	-2.04	-2.19
188007-190910	RS	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
190911-191411	RS	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
191412-192304	RS	0.71	0.71	0.71	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
191305-194001	RS/ possible replacement barometer	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
194002-194611	RS	0.61	0.61	0.62	0.60	0.60	0.60	0.60	0.60	0.60	0.61	0.60	0.63
194612-195201	RS	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
195202-197108	RS/ site move	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
197109-197401	RS	1.33	1.33	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.31	1.33
197402-199201	RS/ Small barometer move in May	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
199202-199312	RS	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20

Table 4 continued.

DATES	REASON FOR ADJUSTMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MILDURA													
189102-190207	RS	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
190208-192808	RS	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12
192809-193812	RS-Also in Alexander	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
193901-194608	RS	0.20	0.20	0.21	0.19	0.19	0.19	0.19	0.19	0.19	0.20	0.20	0.20
194609-195110	RS	-0.58	-0.59	-0.59	-0.59	-0.59	-0.59	-0.59	-0.59	-0.59	-0.59	-0.59	-0.59
195111-196605	RS	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
CAPE OTWAY													
186101-187008	RH	-0.34	-0.23	-0.32	0.00	-0.48	-0.35	-0.10	-0.44	-0.32	-0.40	-0.13	-0.76
187008-189005	RH	1.53	1.50	1.43	1.32	1.38	1.46	1.30	1.46	1.48	1.49	1.54	1.62
189006-189109	RS	-0.80	-0.80	-0.80	-0.80	-0.80	-0.80	-0.80	-0.80	-0.80	-0.80	-0.80	-0.80
189110-190203	RS/ New barometer	-2.80	-2.80	-2.80	-2.80	-2.80	-2.80	-2.80	-2.80	-2.80	-2.80	-2.80	-2.80
190204-190607	RS	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50
190608-190707	RS	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40
190708-192209	RS	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
192210-194010	RS/ Barometer moved	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20
194011-195507	RS	0.51	0.52	0.51	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.51