

Table S1. $\delta^2\text{H}$, $\delta^{18}\text{O}$ and d-excess (Craig 1961) values (‰) of monthly precipitation and stream water on Marion Island between April 2015 to April 2016. Precipitation samples represent the monthly average. RS; Research Station. a.m.s.l; above mean sea level.

Date	$\delta^2\text{H}$ (‰)	$\delta^{18}\text{O}$ (‰)	d-excess (‰)	Sample type	Site	Altitude (m a.m.s.l)	Longitude (°)	Latitude (°)
Apr-15	-26.43	-4.86	12.44	Precipitation	RS	24	37.87	-46.88
May-15	-27.95	-4.44	7.59	Precipitation	RS	24	37.87	-46.88
Jun-15	-43.68	-7.00	12.29	Precipitation	RS	24	37.87	-46.88
Jul-15	-26.41	-4.94	13.08	Precipitation	RS	24	37.87	-46.88
Aug-15	-18.60	-3.78	11.62	Precipitation	RS	24	37.87	-46.88
Sep-15	-35.71	-5.39	7.40	Precipitation	RS	24	37.87	-46.88
Oct-15	-14.72	-3.31	11.76	Precipitation	RS	24	37.87	-46.88
Nov-15	-28.80	-4.50	7.17	Precipitation	RS	24	37.87	-46.88
Dec-15	-27.62	-4.14	5.49	Precipitation	RS	24	37.87	-46.88
Jan-16	-30.85	-4.55	5.54	Precipitation	RS	24	37.87	-46.88
Feb-16	-21.28	-3.71	8.39	Precipitation	RS	24	37.87	-46.88
Mar-16	-27.08	-4.54	9.24	Precipitation	RS	24	37.87	-46.88
Apr-16	-27.74	-4.85	11.02	Precipitation	RS	24	37.87	-46.88
21-Apr-15	-33.80	-5.70	11.80	Stream water	SP01	253	37.82	-46.93
22-Apr-15	-35.40	-5.64	9.72	Stream water	SP01	253	37.82	-46.93
23-Apr-15	-43.00	-6.38	8.04	Stream water	SP01	253	37.82	-46.93
24-Apr-15	-38.20	NA	NA	Stream water	SP01	253	37.82	-46.93
25-Apr-15	-37.00	-6.17	12.36	Stream water	SP01	253	37.82	-46.93
26-Apr-15	-35.60	-6.21	14.08	Stream water	SP01	253	37.82	-46.93
27-Apr-15	-36.90	-5.85	9.90	Stream water	SP01	253	37.82	-46.93
28-Apr-15	-35.20	-5.82	11.36	Stream water	SP01	253	37.82	-46.93
29-Apr-15	-38.00	-5.69	7.52	Stream water	SP01	253	37.82	-46.93
30-Apr-15	NA	-5.86	NA	Stream water	SP01	253	37.82	-46.93
01-May-15	-36.40	-5.64	8.72	Stream water	SP01	253	37.82	-46.93
02-May-15	-36.40	-5.78	9.84	Stream water	SP01	253	37.82	-46.93
03-May-15	-34.00	-5.66	11.28	Stream water	SP01	253	37.82	-46.93
04-May-15	-48.00	-7.60	12.80	Stream water	SP01	253	37.82	-46.93
05-May-15	-45.10	-6.81	9.38	Stream water	SP01	253	37.82	-46.93
06-May-15	-34.30	-6.39	16.82	Stream water	SP01	253	37.82	-46.93
21-Apr-15	-33.60	-5.74	12.32	Stream water	SP03	103	37.86	-46.93
22-Apr-15	-35.40	-5.64	14.36	Stream water	SP03	103	37.86	-46.93
23-Apr-15	-38.40	-6.11	10.48	Stream water	SP03	103	37.86	-46.93
24-Apr-15	-35.40	-5.86	11.48	Stream water	SP03	103	37.86	-46.93
25-Apr-15	-35.70	-5.63	9.34	Stream water	SP03	103	37.86	-46.93
26-Apr-15	-37.20	-6.03	11.04	Stream water	SP03	103	37.86	-46.93
27-Apr-15	-35.80	-5.90	11.40	Stream water	SP03	103	37.86	-46.93
28-Apr-15	-36.10	-5.80	10.30	Stream water	SP03	103	37.86	-46.93
29-Apr-15	-37.10	-6.00	10.90	Stream water	SP03	103	37.86	-46.93
30-Apr-15	-36.20	-6.00	11.80	Stream water	SP03	103	37.86	-46.93
01-May-15	-35.10	-5.87	11.86	Stream water	SP03	103	37.86	-46.93
02-May-15	-35.30	-5.89	11.82	Stream water	SP03	103	37.86	-46.93
03-May-15	-36.40	-5.76	9.68	Stream water	SP03	103	37.86	-46.93
04-May-15	-40.10	-6.46	11.58	Stream water	SP03	103	37.86	-46.93

05-May-15	-38.30	-6.30	12.10	Stream water	SP03	103	37.86	-46.93
06-May-15	-35.60	-6.42	15.76	Stream water	SP03	103	37.86	-46.93
20-May-15	-37.08	-6.06	11.37	Stream water	SP03	103	37.86	-46.93
22-May-15	-41.13	-6.52	11.05	Stream water	SP03	103	37.86	-46.93
25-May-15	-28.79	-4.71	8.88	Stream water	SP03	103	37.86	-46.93
31-May-15	-37.28	-5.91	9.99	Stream water	SP03	103	37.86	-46.93
05-Jun-15	-37.89	-6.10	10.91	Stream water	SP03	103	37.86	-46.93
09-Jun-15	-35.70	-5.45	7.91	Stream water	SP03	103	37.86	-46.93
14-Jun-15	-42.09	-6.25	7.95	Stream water	SP03	103	37.86	-46.93
19-Jun-15	-41.98	-6.86	12.92	Stream water	SP03	103	37.86	-46.93
24-Jun-15	-38.12	-6.05	10.24	Stream water	SP03	103	37.86	-46.93
01-Jul-15	-35.05	-5.78	11.21	Stream water	SP03	103	37.86	-46.93
06-Jul-15	-35.08	-5.82	11.50	Stream water	SP03	103	37.86	-46.93
11-Jul-15	-34.79	-5.89	12.37	Stream water	SP03	103	37.86	-46.93
16-Jul-15	-38.25	-6.40	12.95	Stream water	SP03	103	37.86	-46.93
21-Jul-15	-36.13	-5.88	10.89	Stream water	SP03	103	37.86	-46.93
28-Jul-15	-35.97	-5.99	11.99	Stream water	SP03	103	37.86	-46.93
01-Aug-15	-42.27	-6.70	11.37	Stream water	SP03	103	37.86	-46.93
06-Aug-15	-35.69	-5.97	12.03	Stream water	SP03	103	37.86	-46.93
19-Aug-15	-34.17	-5.70	11.45	Stream water	SP03	103	37.86	-46.93
26-Aug-15	-33.27	-5.38	9.78	Stream water	SP03	103	37.86	-46.93
30-Aug-15	-35.19	-5.41	8.07	Stream water	SP03	103	37.86	-46.93
05-Sep-15	-34.91	-5.63	10.13	Stream water	SP03	103	37.86	-46.93
09-Sep-15	-33.86	-5.40	9.35	Stream water	SP03	103	37.86	-46.93
17-Sep-15	-32.30	-5.05	8.10	Stream water	SP03	103	37.86	-46.93
23-Sep-15	-31.58	-5.11	9.27	Stream water	SP03	103	37.86	-46.93
30-Sep-15	-25.41	-3.97	6.39	Stream water	SP03	103	37.86	-46.93
06-Oct-15	-33.25	-4.79	5.08	Stream water	SP03	103	37.86	-46.93
10-Oct-15	-35.97	-5.60	8.79	Stream water	SP03	103	37.86	-46.93
16-Oct-15	-34.93	-5.48	8.90	Stream water	SP03	103	37.86	-46.93
20-Oct-15	-35.89	-5.61	8.96	Stream water	SP03	103	37.86	-46.93
25-Oct-15	-35.02	-5.65	10.16	Stream water	SP03	103	37.86	-46.93
31-Oct-15	-37.54	-5.91	9.71	Stream water	SP03	103	37.86	-46.93
05-Nov-15	-38.10	-4.93	1.33	Stream water	SP03	103	37.86	-46.93
10-Nov-15	-36.01	-5.34	6.70	Stream water	SP03	103	37.86	-46.93
15-Nov-15	-36.59	-6.19	12.94	Stream water	SP03	103	37.86	-46.93
24-Nov-15	-35.76	-5.72	10.02	Stream water	SP03	103	37.86	-46.93
30-Nov-15	-35.82	-5.72	9.92	Stream water	SP03	103	37.86	-46.93
06-Dec-15	-35.79	-5.75	10.21	Stream water	SP03	103	37.86	-46.93
11-Dec-15	-36.65	-5.50	7.34	Stream water	SP03	103	37.86	-46.93
16-Dec-15	-35.07	-5.21	6.64	Stream water	SP03	103	37.86	-46.93
21-Dec-15	-37.55	-5.71	8.09	Stream water	SP03	103	37.86	-46.93
26-Dec-15	-38.24	-5.83	8.39	Stream water	SP03	103	37.86	-46.93
02-Jan-16	-37.84	-5.85	8.94	Stream water	SP03	103	37.86	-46.93
10-Jan-16	-35.29	-5.26	6.76	Stream water	SP03	103	37.86	-46.93
15-Jan-16	-36.89	-5.73	8.98	Stream water	SP03	103	37.86	-46.93
22-Jan-16	-40.34	-6.44	11.21	Stream water	SP03	103	37.86	-46.93
26-Jan-16	-38.21	-5.83	8.47	Stream water	SP03	103	37.86	-46.93
01-Feb-16	-39.24	-6.19	10.27	Stream water	SP03	103	37.86	-46.93
06-Feb-16	-38.90	-6.19	10.62	Stream water	SP03	103	37.86	-46.93

11-Feb-16	-38.60	-6.08	10.02	Stream water	SP03	103	37.86	-46.93
18-Feb-16	-35.73	-6.18	13.73	Stream water	SP03	103	37.86	-46.93
20-Feb-16	-34.66	-6.01	13.38	Stream water	SP03	103	37.86	-46.93
03-Mar-16	-32.14	-4.29	2.21	Stream water	SP03	103	37.86	-46.93
07-Mar-16	-36.88	-5.76	9.20	Stream water	SP03	103	37.86	-46.93
15-Mar-16	-37.47	-5.59	7.23	Stream water	SP03	103	37.86	-46.93
17-Mar-16	-38.01	-5.73	7.82	Stream water	SP03	103	37.86	-46.93
27-Mar-16	-33.68	-5.22	8.09	Stream water	SP03	103	37.86	-46.93
02-Apr-16	-44.87	-6.91	10.37	Stream water	SP03	103	37.86	-46.93
08-Apr-16	-39.23	-6.15	9.94	Stream water	SP03	103	37.86	-46.93
14-Apr-16	-33.85	-5.54	10.50	Stream water	SP03	103	37.86	-46.93
01-May-16	-36.40	-5.79	9.95	Stream water	SP03	103	37.86	-46.93
