Meteorological Post Processing Documentation and Task Lists for 2015/2016

McMurdo Dry Valley Long Term Ecological Research (LTER)

This document compiles the steps taken to post-process raw meteorological data files and notes from station visits. Each numbered output value is identified by column header name, unit of measurement, and post-processing instruction. Station notes document datalogger time adjustments, sensor status, sensor and station maintenance, time of storage module changes, equipment and data problems, and other observations. Files are listed alphabetically by file name that begin with the station ID.

Station Reports

Appendix

Date of Establishment

Prepared by: Maciej Obryk, 2015-16 Season, Portland State University, OR

File description and task list for files:

o1=omit from level 1
ok= no changes to get to level 1
rclow= reverse temperatures to mV and apply clow subroutine to mV values using Steinhart-Hart equation
bad= normally would be included in level 1 but number is suspect or know to be incorrect
flag= reasonable number but needs a note attached concerning its collection
Lowe= see note for relative humidity below

Data Flags

Definition	Flags	Post-processing	Data Manager
Out of Range	R	None	Flag as R, except flag as "U" when IceT20cm exceeds 0 degrees and "V" when IceT1m exceeds 0 degrees
Negative values zeroed out	Z	Converted to zero	Flag as Z
Bad Value - Value below zeroing value	T	Value omitted	Flag as F
Bad Value - Value is equal to -6999 or known to be questionable	B	None	Flag as B
Bad Value - Raw temp value (-53C and 32.79C) which exceeds the bracketed limited for bisection	F	Value omitted	Flag as B
SwRadOut is greater than a % of SwRadIN	S	None	Flag as S
Wdir and WDirStD zeroed out because WSpd = 0	N	Converted to zero	Flag as N
Value missing	M	None	Flag as M

Relative humidity correction note: All of the relative humidity (RH) values were corrected for a systematic error in the measurement created by an instrument manufacturer error. All RH data with air temperatures below freezing were corrected using the vapor pressure over ice (rather than over water which was used initially). The error became quite large for very cold temperatures (the correction could grow to around 30%). The polynomials used for the correction is based on Lowe (1977).

=[RH3m]*(6.107799961 + [AirT3m] * (0.4436518521 + [AirT3m] * (0.01428945805 + [AirT3m] * (0.0002650648471 + [AirT3m] *(0.000003031240396 + [AirT3m] * (0.00000002034080948 + 0.000000000006136820929 * [AirT3m])))))) / (6.109177956 + [AirT3m] * (0.503469897 + [AirT3m] * (0.01886013408 + [AirT3m] * (0.0004176223716 + [AirT3m] * (0.00000582472028 + [AirT3m] * (0.00000004838803174 + 0.000000001838826904 * [AirT3m])))))))

Lake Bonney Met Station (BOYM)

Filename:	BOYM_201112_T001.dat
Author of this report:	Maciej Obryk
File Period:	11/16/2014 13:00 to 4/22/2015 7:00 and 4/27/2015 17:15 to 11/12/2015 14:30
Sampling Frequency:	sonic and prec. every 60 minutes, wind speed every 4 sec, other every 30 sec
Averaging and Output Interval:	every 15 minutes

	Program Name	
1	array I.D.	o1
2	Year	ok
3	Day	ok
4	Time	Ok
5	mean air temp. @ 3 meters (C)	rclow
6	corrected mean R.H. @ 3 meters (%)	Lowe correction
7	mean air temp. @ 1 meters (C)	rclow
8	mean solar flux going down (W/m2) – **PY51356**	Ok
9	mean solar flux going up (W/m2) – **old SN: PY18633, new SN: PY18656**	Ok
10	mean horizontal wind speed (m/s)	Ok
11	resultant mean wind speed (m/s)	o1
12	resultant mean wind direction (degrees from north)	Ok
13	standard deviation of wind direction (degrees)	ok
14	maximum wind speed (m/s) – **WM57319**	Ok
15	minimum wind speed (m/s)	Ok
16	mean P.A.R. (micromols/s/m2) – **Q28265**	divide by 200, multiply by 292.51
17	mean soil temperature @ 0 cm in soil (C)	rclow
18	mean soil temperature @ 5 cm in soil (C)	rclow
19	mean soil temperature @ 10 cm in soil (C)	rclow
20	sample depth from sensor to surface (cm)	Measured depth * -100
21	mean up-facing pyrgeometer, rad. comp. (W/m2) - **30831F3**	divide by 250; multiply by 277.01
22	mean up-facing pyrgeometer hemisphere temp	Eppley
23	mean up-facing pyrgeometer thermopile (W/m2)	Eppley
24	mean up-facing pyrgeometer case temp	Eppley
25	mean down-facing pyrgeometer, rad. comp. (W/m2) -**32059F3**	divide by 250; multiply by 227.79
26	mean down-facing pyrgeometer hemisphere temp	Eppley
27	mean down-facing pyrgeometer thermopile (W/m2)	Eppley
28	mean down-facing pyrgeometer case temp	Eppley
29	sample precipitation (mm)	ok
30	sample of battery voltage	o1

Notes:

- Station visited on 11/17/2015 by K. Myers and J. Lawrence. All input values looked good.
- Power off between 10:09 – 12:24
- Replaced downward facing pyranometer (Licor, new SN PY18656)
- Replaced sonic altimeter internal transducer
- Replaced temperature sensor @ 1 m

Bonney Riegel Met Station (BRMM)

Filename:	Reigel_201516.dat, Reigel_201517.dat
Author of this report:	Maciej Obryk
File Period:	11/16/2014 19:15 to 11/24/2015 14:30
Sampling Frequency:	Wind every 4 secs, Sonic every 60 minutes, everything else 30 secs
Averaging and Output Interval:	every 15 minutes
Program Name	BRM1011v3

1	array I.D.	o1
2	Year_RTM L	ok
3	Day	ok
4	Time	ok
5	AirT30c _AVG L	rclow
6	SwRadIn_AVG L	ok
7	WSpd1m_S_WVT L	ok
8	WSpd1m_U_WVT L	o1
9	WDir1m_DU_WVT L	ok
10	WDir1m_SDU_WVT L	ok
11	WSpdMax1m L	ok
12	WSpdMin1m L	ok
13	WSpd3m_S_WVT L	ok
14	WSpd3m_U_WVT L	o1
15	WDir3m_DU_WVT L	ok
16	WDir3m_SDU_WVT L	ok
17	WSpdMax3m L	ok
18	WSpdMin1m L	ok
19	SoilT20cm_AVG L	rclow
20	Depth L	Measured depth * -100
21	Battery L	o1

Notes:

- Gap in data between 11/30/2014 11:15 to 11/30/2014 12:45.
- Station visited on 11/24/2015 by K. Myers and C. Takacs-Vesbach.
- Power off between 16:35 – 17:30
- Time on CR10 did not match up with handheld GPS time – time was corrected to agree with GPS time at 16:32 (CR10 read 16:55 when changed). All other input values looked good.
- Replaced upward facing pyranometer (Licor, new SN PY18395)
- Replaced sonic altimeter internal transducer
- Program name BRM1011V3

Bonney Riegel Sensit Station (BRSM): not visited, no data available

Bonney Riegel Theta Soil Station (BRTS): not visited, no data available

Lake Brownworth Met Station (BRHM)

Filename:	BRHM_201516.dat
Author of this report:	Maciej Obryk
File Period:	11/10/2014 18:00 to 11/12/2015 12:45
Sampling Frequency:	sonic every 60 minutes, wind speed every 4 sec, other every 30 sec
Averaging and Output Interval:	every 15 minutes
Program Name	BRHM_201112_v1

1	array I.D.	o1
2	year	ok
3	day	ok
4	time	ok
5	mean air temp. @ 3 meters (C)	rclow
6	corrected mean R.H. @ 3 meters (%)	lowe correction
7	mean solar flux coming down (W/m^2) **old SN: PY28347, new SN: PY25306**	ok
8	mean solar flux going up (W/m^2) **old SN: PY28349, new SN: PY28370**	ok
9	mean horizontal wind speed (m/s)	ok
10	resultant mean wind speed (m/s)	o1
11	resultant mean wind direction (degrees from north)	ok
12	standard deviation of wind direction (degrees)	ok
13	maximum wind speed (m/s)	ok
14	minimum wind speed (m/s)	ok
15	mean P.A.R. (micromols/s/m^2) – **Q30806**	multiply by 1.3960
16	mean soil temperature @ 0 cm in soil (C)	rclow
17	mean soil temperature @ 5 cm in soil (C)	rclow
18	mean soil temperature @ 10 cm in soil (C)	rclow
19	sample depth from sensor to surface (cm) – **C2867**	measured depth * -100
20	sample of battery voltage	o1

Notes:

- Station visited on 11/12/2015 by K. Myers and M. Obryk. All input values looked good.
- Power off between 12:50 – 13:35
- Replaced upward facing pyranometer (Licor, new SN PY25306)
- Replaced downward facing pyranometer (Licor, new SN PY28370)
- Replaced sonic altimeter internal transducer
- Replaced wind monitor (RM Young, new SN WM31284)

Canada Glacier (CAAM)

Filename:	CAAM_201112_T001.dat (CAAM_201516_PROC_Updated_180309)
Author of this report:	Maciej Obryk, James McClure
File Period:	11/11/14 15:30 to 11/7/15 13:00
Sampling Frequency:	wind speed every 4 sec; all other every 30 sec
Averaging and Output Interval:	every 15 minutes
Program Name	CAAM_201112_v1

1	array I.D.	o1
2	Year	ok
3	Day	ok
4	Time	ok
5	mean air temp. @ 3m (C)	rclow
6	corrected mean relative humidity (%)	Lowe correction
7	Aspirated mean air temp @ 3m (C)	rclow
8	mean solar flux coming down (W/m^2) – **old SN: PY23277, new SN: PY20222**	ok
9	mean solar flux going up (W/m^2) – **old SN: PY18395, new SN: PY20565**	ok
10	mean horizontal wind speed (m/s)	ok
11	resultant mean wind speed (m/s)	o1
12	resultant mean wind direction (degrees from north)	ok
13	standard deviation of wind direction (degrees)	ok
14	maximum wind speed (m/s)	ok
15	minimum wind speed (m/s)	ok
16	mV_therm_average	o1
17	mV_tpile_AVG	o1
18	Ice surface temp (C)	ok
19	sample battery voltage	o1

Notes:

- Station visited on 11/7/2015 by K. Myers, D. Acosta, J. Lawrence, and M. Obryk. All input values looked good.
- Power off between 13:14 – 14:20
- Replaced upward facing pyranometer (Licor, new SN PY20222)
- Replaced downward facing pyranometer (Licor, new SN PY20565)
- Replaced wind monitor (RM Young, new SN WM10365)
- Replaced CR10X (Campbell, new SN X44311)
- Lowered met station by 9 cm
- Updated time/day to match GPS
- Processed data from 11/6/15 13:30 —> 11/7/15 13:00 (station visit 2015)
- Added 11/6/15 13:30 —> 11/7/15 13:00 data + reprocessed
- CAAM_201516_PROC_Updated_180309 includes AIRT3ASP 6/20/15 22:45:00 —> 11/6/15 23:45

Explorers Cove Met Station (EXEM)

Filename:	EXEM_201112_T001.dat0 (EXEM_201516_PROC_Updated_180308)	
Author of this report:	Maciej Obryk, James McClure	
File Period:	11/10/14 16:45 to 11/12/15 10:45	
Sampling Frequency:	prec every 60 minutes, wind every 4 secs.; others: every 30 secs.	
Averaging and Output Interval:	every 15 minutes	
Program Name:	EXE1112v1.dld	
1	array I.D.	o1
2	year	ok
3	day	ok
4	time	ok
5	mean air temp. @ 3 meters (C)	rclow
6	mean RH @ 3 meters	lowe correction
7	mean solar flux coming up (W/m^2) - **old SN: PY45668, new SN: PY28167**	ok
8	mean solar flux going down (W/m^2) - **PY23275**	ok
9	mean horizontal wind speed (m/s)	ok
10	resultant mean wind speed (m/s)	o1
11	resultant mean wind direction (degrees from north)	ok
12	standard deviation of wind direction (degrees)	ok
13	maximum wind speed (m/s)	ok
14	minimum wind speed (m/s)	ok
15	mean P.A.R. ($mmols/s/m^2$) - **Q33906**	divide by 200, multiply by 289.95
16	mean soil temperature @ 0 cm (C)	rclow
17	mean soil temperature @ 5 cm (C)	rclow
18	mean soil temperature @ 10 cm (C)	rclow
19	sample precipitation (mm)	ok
20	sample battery voltage	ok

Notes:

- Station visited on 11/12/2015 by K. Myers and M. Obryk. All input values looked good.
- Power off between 10:58 – 11:30
- Replaced downward facing pyranometer (Licor, new SN PY28167)
- Replaced wind monitor (RM Young, new SN WM17401)
- Added processed data from 11/11/15 18:15 —> 11/12/15 10:45 (when station was visited in 2015)

Commonwealth Glacier Met Station (COHM)

Filename:	COHM_201112_T001.dat (COHM_201516_PROC_Updated_180309)
Author of this report:	Maciej Obryk, James McClure
File Period:	11/11/2014 13:30 to 11/7/2015 14:45
Sampling Frequency:	sonic every 60 minutes, wind every 4 secs.; other every 30 secs.
Averaging and Output Interval:	every 15 minutes
Program Name:	COHM_201314_v1

1	array I.D.	o1
2	Year	ok
3	Day	ok
4	Time	ok
5	mean air temp. @ 3 meters (C)	rclow
6	mean R.H. @ 3 meters (%)	lowe correction
7	mean air temp. @ 1 meters (C)	rclow
8	mean solar flux coming down (W/m^2) – **old SN: 33733F3, new SN: 29776F3**	divide by 100; multiply by 119.62
9	mean solar flux going up (W/m^2) – **31435F3**	divide by 100; multiply by 128.04
10	mean horizontal wind speed (m/s)	Ok
11	resultant mean wind speed (m/s)	o1
12	resultant mean wind direction (degrees from north)	ok
13	standard deviation of wind direction (degrees)	Ok
14	maximum wind speed (m/s)	Ok
15	minimum wind speed (m/s)	Ok
16	mean incoming IR pyrgeometer output (pins A-B) (W/m^2) - **32348F3**	divide by 250; multiply by 262.47
17	mean incoming IR hemisphere temp. (pins A-C) (mv)	eppley
18	mean incoming IR thermopile output (pins F-G)(W/m^2)	eppley
19	mean incoming IR case temp. (pins E-D)(mv)	eppley
20	mean outgoing IR pyrgeometer output (pins A-B)(W/m^2) – **29786F3**	divide by 250; multiply by 276.24
21	mean outgoing IR hemisphere temp. (pins F-G) (mv)	eppley
22	mean outgoing IR thermopile (pins A-C) (W/m2)	eppley
23	mean outgoing IR case temp. (pins E-D) (mv)	eppley
24	ice temperature @ 50cm (original depth, mV*0.01)	Offline
25	ice temperature @ 100cm (original depth, mV*0.01)	Offline
26	IRT thermistor (mV)	o1
27	IRT raw ice surface temp mV	o1
28	Surface Temperature (C)	Ok
29	sample depth from sensor to surface (m)	measured depth* -100
30	sample of battery voltage	ok

Notes:

- Gaps in data between 4/22/2015 715 to 4/28/2015 930.
- Station visited on 11/7/2015 by K. Myers, D. Acosta, J. Lawrence, and M. Obryk. All input values looked good.
- Power off between 15:00 – 15:40
- Replaced upward facing pyranometer (new SN 29776F3)
- Replaced wind monitor (RM Young, new SN WM37721)
- Replaced air temperature sensor at 1 m
- Replaced relative humidity sensor at 3 m (Vaisala, new SN V1140041)
- Data added 11/6/15 19:15 —> 11/7/15 14:45 reprocessed

- Station visited on 12/3/2015 by K. Myers, D. Acosta, M. Obryk.
- Power off at 13:44

F6 Met Station (F6MM)

Filename:	F6_201516.dat
Author of this report:	Maciej Obryk
File Period:	11/9/14 15:30 to 12/3/15 22:45
Sampling Frequency:	sonic every 60 min, wind every 4 sec; others: every 30 sec
Averaging and Output Interval:	every 15 min
Program Name:	FSM1112v2.dld

1	array I.D.	o1
2	Year	ok
3	Day	ok
4	Time	ok
5	AirT@1m	rclow
6	AirT@30cm – average	rclow
7	AirT@30cm – sample	o1
8	SwRadIn. @ 82 cm (W/m^2) – PY25307	ok
9	mean horizontal wind speed (m/s) @ 1m	ok
10	resultant mean wind speed (m/s) @ 1m	o1
11	resultant mean wind direction (degrees from north) @ 1m	ok
12	standard deviation of wind direction (degrees) @ 1m	ok
13	maximum wind speed (m/s) @ 1m	ok
14	minimum wind speed (m/s) @ 1m	ok
15	mean horizontal wind speed (m/s) @ 3m	ok
16	resultant mean wind speed (m/s) @ 3m	o1
17	resultant mean wind direction (degrees from north) @ 3m	ok
18	standard deviation of wind direction (degrees) @ 3m	ok
19	maximum wind speed (m/s) @ 3m	ok
20	minimum wind speed (m/s) @ 3m	ok
21	mean soil temperature @ 20 cm in soil	rclow
22	Sonic Ranger Depth (cm)	Measured depth * -100
23	sample of battery voltage	o1

Notes:

No station maintenance 2015/16, only data download.

F6 Sensit Met Station (F6SM) – not visited, data not collected

Mt. Fleming Met Station (FLMM)

Filename:	FLMM_201112_T001.DAT
Author of this report:	Maciej Obryk
File Period:	11/20/2014 15:45 to 12/1/2015 20:15
Sampling Frequency:	wind every 4 sec; others: every 30 sec
Averaging and Output Interval:	every 15 min
Program Name:	flmm_201112_v1.dld

1	array I.D.	o1
2	Year	ok
3	Day	ok
4	Time	ok
5	AirT2m (C)	ok
6	RH1.3m (%)	Lowe correction
7	wspd_U_WVT (m/s)	ok
8	wspd_U_WVT (m/s)	o1
9	WDir DU (degrees)	ok
10	WDir Std Dev	ok
11	WSpd Max (m/s)	ok
12	WSpd Max (m/s)	ok
13	Pressure (mbar)	ok
14	Voltage	o1

Notes:

- Station visited on 12/2/2015 by K. Myers, D. Acosta, and M. Obryk. All input values looked good.
- Power off between 15:05 – 15:10
- Replaced CR10X
- Fixed existing Vaisala Temp/RH sensor (SN Y2850072)

Lake Fryxell Met Station (FRLM)

Filename	FRLM_201112_T001.dat	
Author of this report:	Maciej Obryk	
File Period:	11/10/2014 13:15 to 12/11/2015 12:00	
Sampling Frequency:	sonic every 60 min, wind every 4 sec; others: every 30 sec	
Averaging and Output Interval:	every 15 min	
Program Name:	FRL_201112_v2	
1	array I.D.	o1
2	Year	Ok
3	Day	Ok
4	Time	Ok
5	mean air temp. @ 3 meters (C)	rclow
6	mean RH @ 3 meters	lowe correction
7	mean solar flux coming down (W/m^2) – **old SN: PY41099, new SN: PY45665**	ok
8	mean solar flux going up (W/m^2) – **old SN: PY23276, new SN: PY40423**	ok
9	mean horizontal wind speed (m/s)	ok
10	resultant mean wind speed (m/s)	o1
11	resultant mean wind direction (degrees from north)	ok
12	standard deviation of wind direction (degrees)	ok
13	maximum wind speed (m/s)	ok
14	minimum wind speed (m/s)	ok
15	mean P.A.R. (micromols/s/m^2) – **Q30794**	divide by 200, multiply by 248.59
16	mean soil temperature @ 0 cm in soil (C)	rclow
17	mean soil temperature @ 5 cm in soil (C)	rclow
18	mean soil temperature @ 10 cm in soil (C)	rclow
19	sample depth from sensor to surface (m)	measurement * -100
20	sample of battery voltage	o1

Notes:

- Station visited on 12/4/2015 by K. Myers, D. Acosta, and M. Obryk.
- Replaced upward facing pyranometer (new SN PY45665)
- Replaced downward facing pyranometer (new SN PY40423)

Friis Hills Met Station (FRSM)

Filename:	FRSM_201112T001.dat
Author of this report:	Maciej Obryk
File Period:	12/5/2014 22:30 to 12/1/15 19:00
Sampling Frequency:	wind every 4 sec; others: every 30 sec
Averaging and Output Interval:	every 15 min
Program Name:	FRSM_201112_v1

1	array I.D.	o1
2	Year	ok
3	Day	ok
4	Time	ok
5	Mean air temp. @ 2.5 m (C)	ok
6	Mean RH @ 2.5m (%)	ok
7	NetRad (W m^{-2})	ok
8	NetRad (W m^{-2}) Correction	ok
9	mean horizontal wind speed (m/s)	ok
10	WSpd_U_WVT L	o1
11	resultant mean wind direction (degrees from north)	ok
12	standard deviation of wind direction (degrees)	ok
13	Wind Speed Max (m/s)	ok
14	Wind Speed Min (m/s)	ok
15	Pressure (mbar)	ok

Notes:

- Station visited on 12/2/2015 by K. Myers, D. Acosta, and M. Obryk. All input values looked good.
- Power off between 13:38 – 13:41
- Changed RH sensor (old SN: U2340002, new SN: Y2850111)
- Was unable to change CR10X because of awkward set up of datalogger enclosure – would need more ground time to unplug all of the wires and reconnect everything.
- Manually forced CR10X to read P8

New Lake Hoare Met Station (HO2M)

Filename:	HOEM_201112_T001.dat
Author of this report:	Maciej Obryk
File Period:	12/31/2014 16:45 to 11/10/2015 7:30
Sampling Frequency:	wind every 4 sec.; others: every 30 sec.
Averaging and Output Interval:	every 15 minutes
Program Name	HOEM2_v1.dld

1	array I.D.	o1
2	Day	ok
3	Time	ok
4	mean air temp. @ 3 meters (C)	rclow
5	corrected mean R.H. @ 3 meters (%)	lowe correction
6	mean solar flux going down (W/m2) – **old SN: PY23277, new SN: PY20562**	ok
7	mean solar flux going up (W/m2) – **old SN: PY28170, new SN: PY28371**	ok
8	mean horizontal wind speed (m/s)	ok
9	resultant mean wind speed (m/s)	o1
10	resultant mean wind direction (degrees from north)	ok
11	standard deviation of wind direction (degrees)	ok
12	maximum wind speed (m/s)	ok
13	minimum wind speed (m/s)	ok
14	mean P.A.R. (micromols/s/m2) – **Q29765**	bad
15	mean soil temperature @ 0 cm in soil (C)	rclow
16	mean soil temperature @ 5 cm in soil (C)	rclow
17	mean soil temperature @ 10 cm in soil (C)	rclow
18	sample of battery voltage	o1

Notes:

- Station visited on 11/9/2015 by K. Myers and M. Obryk. All input values looked good.
- Power off between 16:55 – 17:55
- Replaced upward facing pyranometer (new SN PY20562)
- Replaced downward facing pyranometer (new SN PY28371)
- Replaced wind monitor (RM Young, new SN WM27713)
- Replaced air temperature sensor at 1 m
- Replaced relative humidity sensor at 3 m (Vaisala, new SN U2730007)
- Replaced CR10X (Campbell, new SN D52414)
- Added UV sensor to station with independent external power supply for M. Gooseff and A. Bergstrom to met station.

Howard Glacier Met Station (HODM)

Filename:	HODM_201112_T001.dat	
Author of this report:	Maciej Obryk	
File Period:	11/11/2014 14:15 to 11/6/2015 13:15	
Sampling Frequency:	sonic every 60 min, wind every 4 sec; others: every 30 sec	
Averaging and Output Interval:	every 15 minutes	
Program Name:	HODM_201314_01.dld	
1	array I.D.	o1
2	Year	ok
3	Day	Ok
4	Time	ok
5	mean air temp. @ 3 meters (C)	rclow
6	mean R.H. @ 3 meters (%)	lowe correction
7	mean solar flux coming down (W/m^2) – **old SN: 30853F3, new SN: 33733F3**	divide by 100; multiply by 120.77
8	mean solar flux going up (W/m^2) – **old SN: 32058F3, new SN: 29777F3**	divide by 100; multiply by 114.29
9	mean horizontal wind speed (m/s)	ok
10	resultant mean wind speed (m/s)	o1
11	resultant mean wind direction (degrees from north)	ok
12	standard deviation of wind direction (degrees)	ok
13	maximum wind speed (m/s)	ok
14	minimum wind speed (m/s)	ok
15	ice temperature @ 50cm (original depth, mV*0.01)	Offline; removed from data file 11/15/13
16	ice temperature @ 100cm (original depth, mV*0.01)	Offline; removed from data file 11/15/13
17	mean air temp @ 1 meter m (C)	rclow
18	mean rh @ 1 meter (%)	lowe correction
19	sample depth from sensor to surface (cm)	measured depth * -100
20	sample of battery voltage	o1

Notes:

- Station visited on 11/7/2015 by K. Myers, D. Acosta, J. Lawrence, and M. Obryk. All input values looked good.
- Power off between 11:58 – 12:40
- Replaced upward facing pyranometer (Eppley, new SN 33733F3)
- Replaced downward facing pyranometer (Eppley new SN 29777F3)
- Replaced sonic (SN c3387), new depth = 101 cm
- Replaced 12V battery

Miers Valley Met Station (MISM)

Filename:	MISM_201112_T001.txt	
Author of this report:	Maciej Obryk	
File Period:	11/17/2014 14:15 to 2/7/2016 9:00	
Sampling Frequency:	wind every 4 secs.; ultrasonic every 1 hr; others every 30 secs.	
Averaging and Output Interval:	every 15 minutes	
Program Name	MISM_201112_v1.dld	
1	array I.D.	o1
2	year	ok
3	day	ok
4	time	ok
5	mean air temp. @ 3 meters (C)	rclow
6	mean R.H. @ 3 meters (%)	lowe correction
7	mean solar flux coming down (W/m^2) – **PY28169**	ok
8	mean solar flux going up (W/m^2) – **PY23250**	ok
9	mean horizontal wind speed (m/s)	ok
10	resultant mean wind speed (m/s)	o1
11	resultant mean wind direction (degrees from north)	ok
12	standard deviation of wind direction (degrees)	ok
13	maximum wind speed (m/s)	ok
14	minimum wind speed (m/s)	ok
15	mean P.A.R. (micromols/s/m^2) – **old SN: Q30803, new SN: Q23204**	Old: divide by 200, multiply by 306.60 New: divide by 200, multiply by 224.04
16	mean soil temperature @ 0 cm in soil (C)	rclow
17	mean soil temperature @ 10 cm in soil (C)	rclow
18	pressure (mbars)	ok
19	distance to surface (m)	ok
20	sample of battery voltage	o1

Notes:

- Station visited on 12/12/2015 by K. Myers, D. Acosta, and M. Obryk. All input values looked good.
- Power off between 10:55 – 11:30
- Replaced wind monitor (RM Young, new SN WM47474)
- Replaced quantum sensor (Licor, new SN Q23204)
- Replaced CR10X (new SN X44863)

Taylor Glacier Met Station (TARM)

Filename:	TARM_201112_T001.dat
Author of this report:	Maciej Obryk
File Period:	12/5/2014 21:15; to 12/1/2015 19:15
Sampling Frequency:	depth every 60 minutes, wind every 4 secs.; others: every 30 secs.
Averaging and Output Interval:	every 15 minutes
Program Name	TARM_201112_V1

1	array I.D.	o1
2	Year	o1
3	Day	ok
4	Time	ok
5	mean air temp. @ 3 meters (C)	rclow
6	mean R.H. @ 3 meters (%)	lowe correction
7	mean air temp @ 1m (C)	rclow
8	mean RH at 1m (%)	lowe correction
9	mean solar flux coming down (W/m^2) – **old SN: 32057F3, new SN: 31437F3**	divide by 100; multiply by 113.38
10	mean solar flux going up (W/m^2) – **old SN: 29762F3, new SN: 31435F3**	divide by 100; multiply by 125.79
11	mean horizontal wind speed (m/s)	ok
12	resultant mean wind speed (m/s)	o1
13	resultant mean wind direction (degrees from north)	ok
14	standard deviation of wind direction (degrees)	ok
15	maximum wind speed (m/s)	ok
16	minimum wind speed (m/s)	ok
17	ice temp	Offline
18	surface temperature internal thermistor output (mV)	o1
19	surface temperature (mV)	o1
20	surface temperature (C)	ok
21	sample depth from sensor to surface (cm)	multiple by -100
22	sample of battery voltage	ok

Notes:

- Station visited on 12/2/2015 by K. Myers, D. Acosta, and M. Obryk. All input values looked good.
- Power off between 12:10 – 13:00
- Replaced upward facing pyranometer (Eppley, new SN 31437F3)
- Replaced downward facing pyranometer (Eppley, new SN 31435F3)
- Replaced wind monitor (RM Young, new SN WM15192)
- Replaced relative humidity sensor at 1 m (Vaisala, old SN: Z1340106, new SN: W4230007)
- Replaced relative humidity sensor at 3 m (Vaisala, old SN: W4230012, new SN: V1110042)
- Lowered met station by 18.5 cm
- Ultrasonic manual measurement 88 cm to ice

Lake Vanda Met Station (VAAM)

Filename:	VAAM_201112_T001.dat	
Author of this report:	Maciej Obryk	
File Period:	12/12/2014 15:30 to 11/26/2015 14:15	
Sampling Frequency:	wind every 4 secs.; ultrasonic every 1 hr; others every 30 secs.	
Averaging and Output Interval:	every 15 minutes	
Program Name	vaam_201112_v1	
1	array I.D.	o1
2	day	ok
3	time	ok
4	mean air temp. @ 3 meters (C)	rclow
5	mean R.H. @ 3 meters (%)	lowe correction
6	mean solar flux coming down (W/m^2) – **old SN: PY40424, new SN: PY27929**	ok
7	mean solar flux going up (W/m^2) – **old SN: PY33485, new SN: PY28348**	ok
8	mean horizontal wind speed (m/s)	ok
9	resultant mean wind speed (m/s)	o1
10	resultant mean wind direction (degrees from north)	ok
11	standard deviation of wind direction (degrees)	ok
12	maximum wind speed (m/s)	ok
13	minimum wind speed (m/s)	ok
14	mean P.A.R. (micromols/s/m^2) – **old SN: Q29773, new SN: Q20275**	divide by 200, multiply by 256.2893
15	mean soil temperature @ 0 cm in soil (C)	rclow
16	mean soil temperature @ 5 cm in soil (C)	rclow
17	mean soil temperature @ 10 cm in soil (C)	rclow
18	distance to surface (m)	measured depth * -100
19	sample of battery voltage	ok

Notes:

- Station visited on 12/1/2015 by K. Myers, D. Acosta, and M. Obryk. All input values looked good.
- Power off between 13:25 – 14:25
- Replaced upward facing pyranometer (Licor, new SN PY27929)
- Replaced downward facing pyranometer (Licor, new SN PY28348)
- Replaced quantum sensor (Licor, new SN Q20275)
- Replaced wind monitor (RM Young, new SN WM47080)
- Replaced CR10X
- Replaced downward facing pyrgeometer (new SN 29773 or 29775, cannot read)

Lake Vida Met Station (VIAM)

Filename:	VIAM.dat
Author of this report:	Maciej Obryk
File Period:	12/12/2014 17:30 to 12/1/2015 16:00
Sampling Frequency:	wind every 4 secs.; ultrasonic every 1 hr; others every 30 secs.
Averaging and Output Interval:	every 15 minutes
Program Name	Via1213v1

1	array I.D.	o1
2	year	ok
3	day	ok
4	time	ok
5	mean air temp. @ 3 meters (C)	Rclow
6	mean R.H. @ 3 meters (%)	Lowe correction
7	mean solar flux coming down (W/m^2) – **old SN: PY23271, new SN: PY20523**	ok
8	mean solar flux going up (W/m^2) – **old SN: PY18400, new SN: PY56364**	ok
9	mean horizontal wind speed (m/s)	ok
10	resultant mean wind speed (m/s)	o1
11	resultant mean wind direction (degrees from north)	ok
12	standard deviation of wind direction (degrees)	ok
13	maximum wind speed (m/s)	ok
14	minimum wind speed (m/s)	ok
15	mean P.A.R. (micromols/s/m^2) **- Q20526**	divide by 200, multiply by 222.23
16	mean soil temperature @ 0 cm in soil (C)	Rclow
17	mean soil temperature @ 5 cm in soil (C)	Rclow
18	mean soil temperature @ 10 cm in soil (C)	Rclow
19	distance to surface (m)	Measured depth * -100
20	sample of battery voltage	o1

Notes:

- Station visited on 12/2/2015 by K. Myers, D. Acosta, and M. Obryk. All input values looked good.
- Power off between 16:52 – 17:40
- Replaced upward facing pyranometer (Licor, new SN PY20523)
- Replaced downward facing pyranometer (Licor, new SN PY56364)
- Replaced wind monitor (RM Young, new SN WM17809)
- Replaced CR10X

Appendix

Array ID and date of established date

Array ID	ID	Name	Date of Station Establishment
1	HOEM	Lake Hoare	Dec 1, 1993 by Peter Doran, Retired on Nov 7, 2014 by Maciej Obryk
1A	HO2M	Lake Hoare	Dec 27, 2012 by Thomas Nylen
2	FRLM	Lake Fryxell	Jan 6, 1994 by Peter Doran
3	BOYM	Lake Bonney	November 24, 1993 by Peter Doran
4	COHM	Commonwealth Glacier	November 22, 1993 by Peter Doran
5	HODM	Howard Glacier	November 20, 1993 by Peter Doran
6	TARM	Taylor Glacier	November 21, 1994 by Peter Doran
7	VAAM	Lake Vanda	November 24, 1994 by Peter Doran
8	BRHM	Lake Brownworth	November 13, 1996 by Peter Doran and DJ Osborne
9	EXEM	Explorer's Cove	Nov 21, 1997 by Peter Doran, DJ Osborne and K. Sauter
10	CAAM	Canada Glacier (without Eddy Sensors)	Nov 20, 1995 by Karen Lewis; reinstalled Jan 13, 1998
11	VIAM	Lake Vida	November 24, 1995 by Peter Doran
12	????	RETIRED Hoare Submerged	???
13	????	RETIRED Fryxell Submerged	???
14	????	RETIRED Bonney East Submerged	???
15	????	RETIRED Canada Gl. (w/ Eddy Sensors)	???
16	????	RETIRED Bonney West Submerged	???
17	F6MM	F6 Snow Fence, Met, and Sensit	Changed to F6 Met and F6 Sensit by Hassan Basagic
18	BENM	RETIRED Beacon Valley	Jan 27, 2000 by Susan Kaspari, Thomas Nylen and Adrian Green. Retired in Dec 2012.
19	LHPM	RETIRED Lake Hoare Precipitatio	January 26, 2002 by Thomas Nylen (also Upper Howard)
19	UHDM	RETIRED Upper Howard Met	Temporary station Retired in 2004.
19	BLDM	RETIRED Blood Falls	Temporary station 11/14/2004
20	BRMM	Bonney Snow Fence	Changed to Bonney Riegel Met and Sensit by Hassan Basagic
21	FRSM	Friis Hills	Installed by Cuffey et al., ????; absorbed by LTER.
22	FLMM	Mt. Fleming	Installed 10/16/06 by Univ of Wisc AWS
25	GADM	RETIRED Garwood Valley	Installed by Peter Doran; Removed from service in 2011-12
25	MISM	Miers Valley	Installed by Nylen 2011-12
26	GAFM	Garwood Valley Ice Cliff	December 2010 by Thomas Nylen
27	HTDR	Lake Hoare TDR Station	08-09 Season by Hassan Basagic
92	EXSM	RETIRED Explorers Cove Sensity	Installed by Hassan Basagic; Retired Nov 2012
95	F6SM	F6 Snowfence Sensit	Installed by Hassan Basagic
96		Lake Fryxell Sensit	Installed by Hassan Basagic, Data combined with Fryxell station data
97		RETIRED Lake Hoare Sensit	Installed by Hassan Basagic, Retired 12/2010
98		RETIRED Lake Bonney Sensit	Installed by Hassan Basagic in 2005/06, Retired 12/2010
99	BRSM	Bonney Reigel Sensit	Installed by Hassan Basagic
102	BRSS	Bonney Reigel Soil Station	
103	F6SS	F6 Soil station	
104	LHS3	LH Soil station 2	
105	LHS4	LH Soil station 4	
112	BRTS	Bonney Reigel Theta Station	
113	F6TS	F6 Soil station	
114	LHS1	Lake Hoare Soil station 1 Theta	1/28/2003
115	LHS2	Lake Hoare Soil station 3 Soil	1/28/2003
119	HJHM	RETIRED Hjorth Hill Met	Installed by Peter Doran; Removed from service