Meteorological Post Processing Documentation and Task Lists for 2011/2012

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.

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Appendix
Array I.D. key
Data Flags
Date of Establishment

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

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 + 0.00000000006136820929 * [AirT3m]))))) / (6.109177956 + [AirT3m] * (0.503469897 + [AirT3m] *

(0.01886013408 + [AirT3m] * (0.0004176223716 + [AirT3m] * (0.00000582472028 + [AirT3m] * (0.00000004838803174 + 0.000000001838826904 * [AirT3m]))))))

Prepared by: Thomas Nylen, 2011-12 Season, Portland State University, OR

Beacon Valley Met Station (BENM)

Filename:	BENM_201112_SM001.DAT	
Station:	Beacon Valley Met Station (BENM)	
Author of this report:	Thomas Nylen	
File Period:	11/29/2010 15:15 to 12/07/2010 00:30	
Sampling Frequency:	wind every 4 sec.; others: every 30 sec.	
Averaging and Output Interval:	every 15 minutes	
Program Name	ben1011v1	
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) –**PY45665**	ok
7	mean solar flux going up (W/m2) – **PY18400**	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) – Q23199	multiply by 1.48
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:
1) Station stopped working on 12/07/2010 00:30. Datalogger indicated E08 00 when checked on Dec 14, 2011. No idea went wrong. Powered off station.
2) Replaced datalogger, and checked values after new datalogger turned on. Values look good..
3) Swapped out cross-arm for longer 1.25" aluminum pole. Could not split pyranometer stand, and took stand back to LH. Need to reinstall, along with existing PAR and new upfacing pyranometer. Flipped quantum arm, and installed new pyranometer (PY20562)
4) Rotated arm, and repositioned wind box to point north.
5) Removed soil station, and brought back to LH

Filename:	BENM_201112_SM002.DAT	
Station:	Beacon Valley Met Station (BENM)	
Author of this report:	Thomas Nylen	
File Period:	12/14/2011 13:30 to 01/27/2012 12:15	
Sampling Frequency:	wind every 4 sec.; others: every 30 sec.	
Averaging and Output Interval:	every 15 minutes	
Program Name	ben1011v1	
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) –**PY28371**	bad
7	mean solar flux going up (W/m2) – **PY20562**	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) – **Q23199**	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:
1) Visited station on Jan 27, 2012.
2) Installed new upward pyranometer (PY28371) and quantum (Q23199) at ~ 1215.
3) Adjusted clock back 32 seconds on Jan 27, 2012 @ 1155
4) Adjusted wind monitor 3 degrees clockwise at 1230.
5) Swapped SM4M for another SM4M at 1225.

Beacon Valley Theta Soil Station (BVTS)

Filename:	BVTS_201112_SM001.dat	
Station:	Beacon Valley Soil Station (BRSS)	
Author of this report:	Thomas Nylen	
File Period:	11/20/2009 13:00 to 12/14/2011 13:00	
Sampling Frequency:	SoilTemp = 1 hr	
Averaging and Output Interval:	SoilTemp = 1 hr	
Program Name	?????	
1	Array	o1
2	Year	ok
3	Day	ok
4	Time	ok
5	SoilTemp_1	ok
6	SoilTemp_2	ok
7	SoilTemp_3	ok
8	SoilTemp_4	ok

Notes:
1) Station removed Dec 14, 2011 at 1300
2) Array = 102, Do not know the configuration of this station.
3) No missing data

Filename:	BVTS_201112_SM001.dat	
Station:	Beacon Valley Theta Station (BRTS)	
Author of this report:	Thomas Nylen	
File Period:	11/21/2009 12:00 to 12/14/2011 12:00	
Sampling Frequency:	Theta = 24 hrs	
Averaging and Output Interval:	Theta = 24 hrs	
Program Name	?????	
1	Array	o1
2	Year	ok
3	Day	ok
4	Time	ok
5	Seconds	ok
6	ThetaProbe_1	ok
7	ThetaProbe_2	ok
8	ThetaProbe_3	ok
9	ThetaProbe_4	ok
10	Voltage	o1

Notes:
1) Station removed Dec 14, 2011 at 1300
2) Array = 113, Do not know the configuration of this station.
3) No missing data

Lake Bonney Met Station (BOYM)

Filename:	BOYM_201112_SM001.dat	
Station:	Lake Bonney Met Station (BOYM)	
Author of this report:	Thomas Nylen	
File Period:	01/21/2011 22:45 to 12/21/2011 14:45	
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	boy1011v2	
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) – **P23269**	ok
9	mean solar flux going up (W/m2) – **PY23250**	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	mean P.A.R. (micromols/s/m2) – **Q33906**	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:
1) CR10X 4 minutes and 24 secs behind GPS time. Adjusted a12/21/2011 13:46.
2) Input values look good
3) Sonic height = 52.2 cm
4) Wind monitor is aligned north
5) Swapped RH at 1354
6) Installed a flexcharge charge controller in main battery box and disconnect regulator in the 20W panel. Connected battery to charge controller and power for datalogger to load on charge controller.
7) Installed Freewave radio (916-7015) with cross-over cable, SC32B and connected power cable to Sw12V and G on CR10X. Yellow wire from C8 to Sw12V Ctrl. Radio will turn on for an hour between 0700-0800, 1300-1400, 1900-2000 and 0100-0200 between Oct 1 to March 1 and between 0700-0800 during the winter.

8) No missing data
9) Loaded new program, boy_201112_v1 (radio) at 12/21/10 1445 and swapped module.
10) Swapped prec fluid. Added 2 liters of glycol and some mineral oil.
11) Still need to swap the licor pyranometers and install internal radio cable and bulkhead. Installed up and downwar pyranometer on Jan 27. 2012. Do not have the serial numbers. Also installed internal radio cable and bulkhead.

Bonney Riegel Met Station (BRMM)

Filename:	BRMM_201112_SM001.dat	
Station:	Bonney Riegel Met Station (BRMM)	
Author of this report:	Thomas Nylen	
File Period:	01/21/2011 16:45 to 12/22/2011 11:45	
Sampling Frequency:	Wind every 4 secs, Sonic every 60 minutes, everything else 30 secs	
Averaging and Output Interval:	every 15 minutes	
Program Name	BRM1011v2.ddl	
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:
1) CR10X clock ahead 4 min and 45 secs. Adjusted Dec 22, 2011 @ 1033
2) Input values look good
3) Wind monitor black boxes pointing north
4) Ultrasonic height is 120cm and sensits are 20.4 and 98.0 cm above the soil
5) Swapped upfacing pyranometer (old = PY28169, new PY41090) at 1100
6) Swapped CR10X and both wind monitors
7) No missing data, processed results look good
8) GPS position: 77.72473, 162.313 and 113m

Bonney Riegel Sensit Station (BRSM)

Filename:	BRSM_201112_SM001.dat	
Station:	Bonney Riegel Sensit Station (BRSM)	
Author of this report:	Thomas Nylen	
File Period:	12/17/2010 12:46 to 12/22/2011 11:46	
Sampling Frequency:	60 secs	
Averaging and Output Interval:	every 15 minutes	
Program Name	BRS1011v1	
1	array I.D.	o1
2	Day	ok
3	Time	ok
4	PC20cm_TOT L	ok
5	PC100cm_TOT L	ok
6	sample of battery voltage	o1

Notes:
1) CR10X ahead 5 minutes and 39 seconds. Adjusted back on 12/22/2011
2) Moved battery case to the north of the old fence to get it out of the way of the instruments.
3) Swapped CR10X
4) No missing data, processed values lookgood
5) Need to add an additional battery at site. Voltage got down to 11.5 during winter

Bonney Riegel Theta Soil Station (BRTS)

	Filename:	BRSS_201112_SM001.dat	
	Station:	Bonney Riegel Soil Station (BRSS)	
	Author of this report:	Thomas Nylen	
	File Period:	01/21/2011 17:00 to 12/22/2011 12:00	
	Sampling Frequency:	SoilTemp = 1 hr	
	Averaging and Output Interval:	SoilTemp = 1 hr	
	Program Name	?????	
1	Array (102)		o1
2	Year		ok
3	Day		ok
4	Time		ok
5	SoilTemp_1		ok
6	SoilTemp_2		ok
7	SoilTemp_3		ok
8	SoilTemp_4		ok

Notes:
1) CR10X behind 1 minute and 22 seconds. Adjusted 12/22/2011 @1203
2) Lat: 77.72473, Long: 162.313 and elevation 113m
3) Do not know the configuration of this station.
4) No missing data, processed data looks good
5) Swapped CR10X, loaded new program, BRTS_201112_V1.dld when swapped modeule. Changed program to sample theta probes once every 15 minutes, and output soil and theta every 15 monites.

	Filename:	BRSS_201112_SM001.dat	
	Station:	Bonney Riegel Theta Station (BRTS)	
	Author of this report:	Thomas Nylen	
	File Period:	01/22/2011 12:00 to 12/22/2011 12:00	
	Sampling Frequency:	Theta = 24 hrs	
	Averaging and Output Interval:	Theta = 24 hrs	
	Program Name	?????	
1	Array (112)		o1
2	Year		ok
3	Day		ok
4	Time		ok
5	Seconds		ok
6	ThetaProbe_1		ok
7	ThetaProbe_2		ok
8	ThetaProbe_3		ok
9	ThetaProbe_4		ok

Notes:
1) CR10X behind 1 minute and 22 seconds. Adjusted 12/22/2011 @1203
2) Lat: 77.72473, Long: 162.313 and elevation 113m
3) Do not know the configuration of this station.
4) No missing data, processed data looks good
5) Swapped CR10X, loaded new program, BRTS_201112_V1.dld when swapped modeule. Changed program to sample theta probes once every 15 minutes, and output soil and theta every 15 minutes.

Lake Brownworth Met Station (BRHM)

Filename:	BRHM_201112_SM001.dat	
Station:	Lake Brownworth Met Station (BRHM)	
Author of this report:	Thomas Nylen	
File Period:	11/19/2010 15:15 to 01/06/2012 13:30	
Sampling Frequency:	sonic every 60 minutes, wind speed every 4 sec, other every 30 sec	
Averaging and Output Interval:	every 15 minutes	
Program Name	brh201011v1	
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) – **PY40423**	ok
8	mean solar flux going up (W/m^2) – **PY27929**	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) - **Q32567**	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)	measured depth * -100
20	sample of battery voltage	o1

Notes:
1. No Missing Data
2. Time adjusted +2 min and 15 secs on 01/06/2012 12:56
3. Check input values and wind alignment on 01/06/2012 13:15, all values look good, except the ultrasonic ranger is not working. Removed.
4. Maintenance on 01/06/2012 12:45 to 15:00: replaced RH probe, moved downward pyranometer to new cross-arm beside ultrasonic ranger, replaced upward pyranometer stand, rotated top crossbar with wind to the south and the upward pyranometer on the north side, rotated quantum arm 20 degrees in the counterclockwise direction and install a freewave radio, radio antenna and SC932b/serial cable. Connected power for radio to Sw12V Ctrl, with the control connected to C7.
5. Swapped SM4M on 01/06/2012 14:00. Loaded new program, BRHM_201112_v1, which includes lines for the radio.
6. Installed a Flexcharge charge controller and removed CSI regulator. Placed the CR10X power in battery port, rather than load
7. Location: Lat: 77.43345, Long:162.70354 and 287m
8. Not connecting with the radio

Filename:	BRHM_201112_SM002-003.dat	
Station:	Lake Brownworth Met Station (BRHM)	
Author of this report:	Thomas Nylen	
File Period:	01/06/2012 14:00 to 1/26/2012 16:15	
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) – **PY40423**		ok
8	mean solar flux going up (W/m^2) – **PY27929**		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) - **Q32567**		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)		measured depth * -100
20	sample of battery voltage		o1

Notes:
1. Missing one line of data between SM001 and SM002.
2. Time adjusted + 10 secs on 01/26/2012 16:11
3. Check input values and wind alignment on 01/26/2012 16:15, all values look good, except the ultrasonic ranger is not working. Reinstalled sonic.
4. Swapped SM4M on 01/26/2012 16:15.
5. Not connecting with the radio

Canada Glacier (CAAM)

Filename:	CAAM_201112_SM001-SM002.dat	
Station:	Canada Glacier Met Station (CAAM)	
Author of this report:	Thomas Nylen	
File Period:	01/26/2011 14:15 to 01/4/2012 16:15	
Sampling Frequency:	wind speed every 4 sec; all other every 30 sec	
Averaging and Output Interval:	every 15 minutes	
Program Name	caa1011v1	
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) - **PY20565**	ok
9	mean solar flux going up (W/m^2) - **PY18395**	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:
1. Adjusted the main CR10X clock -2 min and 30 secs on Nov 1, 2011 @ 1251 and the CR10X fan + 19 minutes and 58 secs. Adjust clock ahead 10 secs on Jan 4, 2012 @ 1459
2. Check input values on Nov 1, 2011 and Jan 4, 2012, main station looks good. No input values on fan datalogger. Swapped module on fan datalogger, and pulled the power to reload the datalogger program. Fan started working.
3. Wind monitor pointing north
4. Swapped out storage module just before Nov 1, 2011 1315
5. Lowered station 7.9 cm (all legs by the same amount).
6. RH was not working, replugged sensor on 11/7/2011 @1150, working again.
7. On Jan 4, 2012, removed aspirated shield, and moved air temp probe to new shield at 1m about the ice.
8. On Jan 4, 2012, lowered station by ~ 13cm???
9. Installed freewave radio, SC932B, and 12dbi antenna to station. Power is from the sw12v ctrl. Pointed antenna at Mt. Voslips.
10. Loaded new program, CAAM_201112_v1 on Jan 4, 2012 @ 1615. Added lines to turn on/off radio to program
11. GPS position: S77.6125, E162.96384 and 267m

Commonwealth Glacier Met Station (COHM)

Filename:	COHM_201112_SM001.dat, COHM_201112_SM002.dat	
Station:	Commonwealth Glacier Met Station (COHM)	
Author of this report:	Thomas Nylen	
File Period:	01/19/2011 9:45 to 01/03/2012 10:00	
Sampling Frequency:	sonic every 60 minutes, wind every 4 secs.; other every 30 secs.	
Averaging and Output Interval:	every 15 minutes	
Program Name:	Coh1011v1	
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) - **33733F3**	divide by 100; multiply by 119.62
8	mean solar flux going up (W/m^2) – **31435F3**	divide by 100; multiply by 128.04
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 incoming IR pyrgeometer output (pins A-B) (W/m^2) - **32348F3**	divide by 250; multiply by 262.47
16	mean incoming IR hemisphere temp. (pins A-C) (mv)	eppley
17	mean incoming IR thermopile output (pins F-G)(W/m^2)	eppley
18	mean incoming IR case temp. (pins E-D)(mv)	eppley
19	mean outgoing IR pyrgeometer output (pins A-B)(W/m^2) – **29786F3**	divide by 250; multiply by 276.24
20	mean outgoing IR hemisphere temp. (pins F-G) (mv)	eppley
21	mean outgoing IR thermopile (pins A-C) (W/m2)	eppley
22	mean outgoing IR case temp. (pins E-D) (mv)	eppley
23	ice temperature @ 50cm (original depth, mV*0.01)	poly (n0=-105.05,n1=232.89,2=-494.81,n3=669.70, n4=-533.67,n5=247.01,n6=-61.29, n7=6.325
24	ice temperature @ 100cm (original depth, mV*0.01)	poly (n0=-106.23,n1=239.65,2=-512.50, n3=693.49 ,n4=-551.71,n5=254.79,n6=-63.07, n7=6.492
25	IRT thermistor (mV)	o1
26	IRT raw ice surface temp mV	o1
27	Surface Temperature (C)	Ok
28	sample depth from sensor to surface (m)	measured depth* -100
29	sample of battery voltage	o1

Notes:
1. No missing data.
2. Datalogger clock +00:04:53. Adjusted back on Nov 3, 2010 1005
3. All input values appear correct.

4. Swapped SM4M storage module with SM4M on November 3, 2011 at 1008
5. Sonic height is 129 cm.
6. Wind is aligned north
7. Ice stake height: 135.3, 135.2, 135.5, 135.6
8. Lat: S 77 33.883 and E 163 16.959
9. Turned off station just after 01/03/2012 10:00
10. Moved station up near its original location. Installed new legs with couplings instead of 4x4' post. Had problems with the drilling because of the water near the surface. Only got one pole in in the two northern legs. The rear one has about one and a half poles. Oriented station so rear leg points north. Aligned new top bar to north as well. Moved downward pyranometer and pyrgeometer to sonic cross arm. Moved the cross-arm out a bit to the north. Tapped out solar radiation mounts, and installed new screws.
11. Replaced RH head, wind monitor, upward pyranometer (new #30884F3, calibration = 8.26), downward pyranometer (new 29763F3, calibration 8.33) and added airt1m.
12. Installed freewave radio, SC932B, and 12dbi antenna to station. Power is from the sw12v ctrl. Pointed antenna at Mt. Voslips.
13. Heights, AirT1m = 83 cm, surface temp = 41 cm, Air3m/RH3m = 300 cm, wind monitor (center of prop) = 335 cm, downfacing pyranonmeter and pygeometer = 69 cm, upfacing pyranometer and pyrgeorometer = ~ 310cm, ultrasonic ranger = 61.7cm.
14. Loaded new program, cohm_201112_v1 at 1420. New program has lines for turning the radio on between 0600-0700, 1200-1300, 1800-1900 and 0000-0100 between Oct 1 and March 1 and between 0600-0700 in the winter. Also added AirT1m, which will be used by sonic for distance as well. The airt1m was installed in multiplexer. Ran additional wire from terminal block in the multiplexer box to the AG on the CR10X. Connected the AG wires for the Apogee surface temp probe as well.
15. New location is 77.56408, 163.28088 and 290m
16. Adjusted clock ahead 1 min and 8 secs on 1/3/2012 @ 1428.

Explorers Cove Met Station (EXEM)

Filename:	EXEM_201112_SM001.dat	
Station:	Explorer's Cove Met Station (EXEM)	
Author of this report:	Thomas Nylen	
File Period:	01/05/2011 16:30 to 11/17/2011 17:30	
Sampling Frequency:	prec every 60 minutes, wind every 4 secs.; others: every 30 secs.	
Averaging and Output Interval:	every 15 minutes	
Program Name:	exe1011v2.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) - **PY56386 (PY23275 – last 3 lines)**	ok
8	mean solar flux going down (W/m^2) - **PY51355 (PY45668 – last 3 lines)**	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): **Q30801 (Q33906 – last 2 lines)**	divide by 200, multiply by 221.64 (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	o1

Notes:
1. Station visited on Nov 17, 2011 between 1350 and 1745
2. CR10X behind by 6 minutes and 1 sec. Adjusted at 11/17/2011 14:07
3. Input values look good
4. Wind 10 degrees off, rotate 10 degrees counterclockwise on 11/17/2011 @ 1600
5. Replaced Upward Licor Pyranometer (Old# PY56386 and New# PY23275) and Downward Pyranometer (Old# PY51355and New# PY45668) between 11/17/2011 16:15 and 11/17/2011 16:45 and Quantum (Old# Q30801 and New# Q33906)
6. Moved downward pyranometer to quantum arm (from FRL Met station), which is pointing to the NNW. Much lower to the ground. Height to be measured next time.
7. Installed radio, yagi antenna, SC32B, and relay switch (C7). Yagi pointed at Kukri Hills remore site.
8. Swapped SM4M and loaded new program, EXE201112v1.dld on 11/17/2011 17:30
9. Replaced leveling stand for PAR. All leveling mounts have new set screw.
10. Inspected water in prec gage. Too much to replace. Bring large container next visit.
11. Need to adjust both charge controllers. Voltage too high
12. Location, S 77 35.325, 163 25.051, 88 m
13. Repositioned SoilT0cm to be slightly buried. The probe tip was exposed.
14. Swapped prec fluid on 12/28/2011. Added 4 liters of glycol back to bucket.
15. Oriented radio antenna towards Voslips
16. Reqired relay, #1 Battery+, #2 = Radio+, #3 = ground for radio, CR10x and battery and #4 = Ctrl Port 7
17. Changed storage module to ring mode
18. Swapped flexcharge charge controller for CSI regulator. Power for radio is on the load on the flexcharge.

Explorers Cove Sensit Station (EXSM)

Filename:		EXSM_201011_SM001-003.dat	
Station:		Explorers Cove Sensit Station (EXSM)	
Author of this report:		Thomas Nylen	
File Period:		01/05/2011 16:46 to 12/28/2011 11:31	
Sampling Frequency:		60 secs between 00-01, 15-16, 30-31 and 45-46 during each hour	
Averaging and Output Interval:		every 15 minutes	
Program Name		exs1011v1.dld	
1	array I.D.		o1
2	Year		ok
3	Day		ok
4	Time		ok
5	Particle Count		ok
6	Kinetic Energy		ok
7	sample of battery voltage		o1

1. CR10X ahead by 23 minute ad 46 seconds. Adjusted at 01/05/2011 16:34
2. Turned off CR10x on 11/17/2011 @ 1746. Replaced and moved CR10x to Exe Met battery box. Was going to move the CR10X to main station datalogger box, but sensit cable is not long enough
3. Turned station back on at 11/17/2011 15:02. Data missing between 11/17/2011 14:46 and 11/17/2011 15:01
4. Downloaded data on 12/28/2011, and cleared module.
5. Adjusted time on sensit datalogger on Dec 28, 2011 by +16 secs

F6 Met Station (F6MM)

Filename:	F6MM_201112_SM001.dat	
Station:	F6 Met Station (F6MM)	
Author of this report:	Thomas Nylen	
File Period:	01/27/11 13:45 to 11/07/2011 10:45	
Sampling Frequency:	sonic every 60 min, wind every 4 sec; others: every 30 sec	
Averaging and Output Interval:	every 15 min	
Program Name:	F6M1011V3.dld	
1	array I.D.	o1
2	Year	ok
3	Day	ok
4	Time	ok
5	AirT@1m	rclow
6	AirT@30cm	rclow
7	SwRadIn. @ 82 cm (W/m^2) – PY25307	ok
8	mean horizontal wind speed (m/s) @ 1m	ok
9	resultant mean wind speed (m/s) @ 1m	o1
10	resultant mean wind direction (degrees from north) @ 1m	ok
11	standard deviation of wind direction (degrees) @ 1m	ok
12	maximum wind speed (m/s) @ 1m	ok
13	minimum wind speed (m/s) @ 1m	ok
14	mean horizontal wind speed (m/s) @ 3m	ok
15	resultant mean wind speed (m/s) @ 3m	o1
16	resultant mean wind direction (degrees from north) @ 3m	ok
17	standard deviation of wind direction (degrees) @ 3m	ok
18	maximum wind speed (m/s) @ 3m	ok
19	minimum wind speed (m/s) @ 3m	ok
20	mean soil temperature @ 20 cm in soil	rclow
21	Sonic Ranger Depth (cm)	Measured depth * -100
22	sample of battery voltage	o1

Notes:
1. Station visited on 11/08/2011 between 1040 and 1200
2. Cr10x time ahead 10 min and 51 secs. Adjusted back 11/07/2011 @1047
3. Input values checked on 11/07/2011, all looks good
4. Wind monitors point north
5. Ultrasonic ranger 76.6 cm above the surface
6. SM4M replaced 11/07/2011 @ 1047

Filename:	F6MM_201112_SM002-5dat	
Station:	F6 Met Station (F6MM)	
Author of this report:	Thomas Nylen	
File Period:	11/07/2011 11:00 to 11/15/2011 19:45	
Sampling Frequency:	sonic every 60 min, wind every 4 sec; others: every 30 sec	
Averaging and Output Interval:	every 15 min	
Program Name:	F6M1011V3.dld	
1	array I.D.	o1
2	Year	ok
3	Day	ok
4	Time	ok

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

Notes:
1. Station visited on 11/15/2011 between 1455 and 1945
2. Cr10x time ahead 07 secs. Adjusted back 11/15/2011 @1455
3. Input values checked on 11/15/2011, all looks good
4. Wind monitors point north
5. Ultrasonic ranger 81.6 cm above the surface, Sensits are 30.6 and 101.1 cm
6. SM4M removed on 11/15/2011 @ 1645.
7. CR10x replaced between 1632 and 1635.
8. Wind3m replaced between 1530 and 1550 and Wind1m replaced between 1500 and 1531
9. New program, F6M1112v1.dld, loaded 1945. Added 15 minute sample of AirT3m, need to do the same with soil temperature – for comparison with HOBOs
10. Connect power for the Sensit datalogger to the 12V and G on F6 Met CR10X.
11. Replaced 20W solar panel charge controller with Campbell regulator. The SOLAREX was overcharging gel cell battery. Turned the voltage down to lowest output on Campbell regulator.
12. Replaced set bolt (tapped old hole with large hole) on SwRadIn.

Filename:	F6MM_201112_SM007.dat	
Station:	F6 Met Station (F6MM)	
Author of this report:	Thomas Nylen	
File Period:	11/15/2011 19:45 to 12/29/2011 09:45	
Sampling Frequency:	sonic every 60 min, wind every 4 sec; others: every 30 sec	
Averaging and Output Interval:	every 15 min	
Program Name:	F6M1112V1.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:
1. Station visited on 11/18/2011 between 11145 and 1230
2. Loaded new program, FSM1112v2.dld at 1215. Added sample of SoilT30cm to compare with HOBO soil probe.
3. Duplicate line between F6M_201112_005 and F6M_201112_006. Ignore second 11/15/2011 19:45
4. Adjusted CR10X back 3secs on Dec 29, 2011 @ 09:44:50
5. Downloaded data from storage module on Dec 29, 2011 @ 0945

F6 Sensit Met Station (F6SM)

Filename:	F6SM_201112_SM001.dat	
Station:	F6 Sensit Station (F6SM)	
Author of this report:	Thomas Nylen	
File Period:	12/23/2010 17:46 to 11/07/2011 10:31	
Sampling Frequency:	60 seconds	
Averaging and Output Interval:	every 15 min	
Program Name:	F6S1011V1.dld	
1	array I.D.	o1
2	Year	Ok
3	Day	Ok
4	Time	Ok
5	PC_1	Ok
6	PC_2	Ok
7	sample of battery voltage	o1

Notes:

1. Sensit datalogger + 2min and 27 secs, adjusted 11/08/2011 @ 1042

Filename:	F6SM_201112_SM002.dat	
Station:	F6 Sensit Station (F6SM)	
Author of this report:	Thomas Nylen	
File Period:	11/07/2011 10:46 to 11/15/2011 14:16	
Sampling Frequency:	60 seconds	
Averaging and Output Interval:	every 15 min	
Program Name:	F6S1011V1.dld	
1	array I.D.	o1
2	Year	Ok
3	Day	Ok
4	Time	Ok
5	PC_1	Ok
6	PC_2	Ok
7	sample of battery voltage	o1

Notes:
1. Station visited on 11/15/2011 between 1400 and 1800
2. Sensit datalogger clock is correct
3. Installed new CR10X datalogger in F6 met box. Turned off old CR10x at 1418 and moved cables to new datalogger. Sensit at 30cm is actually in Pulse port 1, not 2 as previously stated. Data prior to this season is reversed.
4. Power for CR10x from F6 Met CR10x. Turned new logger on at 1441
5. Tested both sensits. Got no response with 10 taps on the sensit at 30.6 cm. Only a few hits during the winter. Believe this sensit is not working properly. Got 14 hits after tapping sensit at 101.0 cm height.
6. Loaded new program, F6S1112v1, when station was powered back on. Corrected mix up with the two sensors, and changed the output between 14 -15 every 15 minutes instead of 0-1 ever 15 minutes.

Filename:	F6SM_201112_SM003-6.dat
Station:	F6 Sensit Station (F6SM)
Author of this report:	Thomas Nylen
File Period:	11/15/2011 14:45 to 12/29/2011 09:45
Sampling Frequency:	60 seconds
Averaging and Output Interval:	every 15 min

Program Name:		F6S1112V1.dld	
1	array I.D.		o1
2	Year		Ok
3	Day		Ok
4	Time		Ok
5	PC_1		Ok
6	PC_2		Ok
7	sample of battery voltage		o1

Notes:
1. Station visited on 11/18/2011 between 1145 and 1215
2. Swapped Sensit at 30cm with LF sensit.
3. Turned power off F6 Met, which also causes the F6 Sensit datlogger to reboot.
4. To note, the output interval is now at the 15 minute mark.
5. Ignore values in these data files. Any results are due to testing of the sensors.
6. CR10X behind 22 secs, adjusted 12/29/2011 @ 0951

F6 Theta Soil Station (F6TS)

Filename:	F6ST_201112_SM001.DAT	
Station:	F6 Theta Soil Station (F6TS)	
Author of this report:	Thomas Nylen	
File Period:	1/27/2011 14:00 to 12/29/2011 9:00	
Sampling Frequency:	SoilTemp = 1 hr, Theta = 24 hrs	
Averaging and Output Interval:	SoilTemp = 1 hr, Theta = 24 hrs	
Program Name	F6????	
1	Array (102)	ok
2	Year	ok
3	Day	ok
4	Time	ok
5	SoilT1	o1
6	SoilT2	ok
7	SoilT3	ok
8	SoilT4	ok

Filename:	F6ST_201112_SM001.DAT	
Station:	F6 Theta Soil Station (F6TS)	
Author of this report:	Thomas Nylen	
File Period:	1/27/2011 14:00 to 12/29/2011 9:00	
Sampling Frequency:	SoilTemp = 1 hr, Theta = 24 hrs	
Averaging and Output Interval:	SoilTemp = 1 hr, Theta = 24 hrs	
Program Name	F6????	
1	Array (113)	ok
2	Year	ok
3	Day	ok
4	Time	ok
5	Secs	o1
6	Theta_1	ok
7	Theta_2	ok
8	Theta_3	ok
9	Theta_4	ok
10	Voltage (sometimes)	o1

Notes:
1) CR10X behind 1381 secs, reset on 12/29/2012 @ 0935
2) Loaded new program, F6TS_201112_v1.dld on 12/29/2012 @ 1030

Mt. Fleming Met Station (FLMM)

Filename:	FLMM_201112_SM001.DAT	
Station:	Mt. Fleming Met Station (FLMM)	
Author of this report:	Thomas Nylen	
File Period:	01/08/2011 11:00 to 12/14/2011 15:15	
Sampling Frequency:	wind every 4 sec; others: every 30 sec	
Averaging and Output Interval:	every 15 min	
Program Name:	flm201011v1.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

Notes:
1. Cr10X 1 minutes and 12 secs behind. Adjusted time at 12/14/2011 1442.
2. Swapped wind monitor, RH head, CR10X and pressure.
3. Installed FGR-115RC radio, wavelink PRO890-12-40F02N4 12 dbi antenna, Crydom solid-state relay DC60S3 and SC32B. Antenna pointed at Lake Vanda. No connection
4. Loaded new program, FLMM_201112v1.dld at 12/14/2011 @ 1515

Filename:	FLMM_201112_SM002-003.DAT	
Station:	Mt. Fleming Met Station (FLMM)	
Author of this report:	Thomas Nylen	
File Period:	12/14/2011 15:30 to 01/26/2012 14:15	
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:
1. Cr10X 2 minutes and 10 secs behind. Adjusted time at 01/26/2011 1420.
2. Swapped out pressure with old sensor. Was not sure new one was working, which it was. Need to replace again next season..
3. Loaded new program, FLMM_201112_v2.dld at 12/14/2011 @ 1515. Corrected mistaking in radio timing. Moved wire from C8 to C7, wrong location for turning the SwCtrl12V. Rotated radio antenna 10 degrees CW. Still no success connecting with the hub at Vanda
4. Second air temp is still not working. Need to check program.

Lake Fryxell Met Station (FRLM)

Filename	FRLM_201112_SM001.dat	
Station:	Lake Fryxell Met Station (FRLM)	
Author of this report:	Thomas Nylen	
File Period:	12/23/2010 12:30 to 11/08/2011 12:30	
Sampling Frequency:	sonic every 60 min, wind every 4 sec; others: every 30 sec	
Averaging and Output Interval:	every 15 min	
Program Name:	Frl1011v1.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 down (W/m^2) - **PY20222**	ok
8	mean solar flux going up (W/m^2) - **PY23277**	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) - **Q29765**	divide by 200, multiply by 261.14
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	particle count Sensit (1 min sample: hits per min)	ok
21	sample of battery voltage	o1

Notes:
1. Visited station 11/08/2011 between 1225 and 1245
2. CR10X +47 seconds. Adjusted 11/08/2011 1228.
3. Input values look good on 11/08/2011
4. Wind pointing north on 11/08/2011
5. Sonic height = 105.4, sensit height = 22.2
6. Swapped module at 11/08/2011 12:32
7. Wind Monitor is making noise.
8. Lat: 77 36.661 and Long 163 10.115

Filename	FRLM_201112_SM002.dat	
Station:	Lake Fryxell Met Station (FRLM)	
Author of this report:	Thomas Nylen	
File Period:	11/08/2011 12:45 to 11/16/2011 10:45	
Sampling Frequency:	sonic every 60 min, wind every 4 sec; others: every 30 sec	
Averaging and Output Interval:	every 15 min	
Program Name:	Frl1011v1.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 down (W/m^2) - **PY20222**	ok
8	mean solar flux going up (W/m^2) - **PY23277**	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) - **Q29765**	divide by 200, multiply by 261.14
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	particle count Sensit (1 min sample: hits per min)	ok
21	sample of battery voltage	o1

Notes:
1. Visited station 11/16/2011 between 1100 and 2400
2. CR10X time matches GPS time on 11/16/2011 1100.
3. Turned off station on 11/16/2011 1100
4. Moved station up the hill. Feet are still attached with stakes at old site. Need to go back and remove. Location of site needs to be GPS as well. Handheld location is S77 36.682 and E163 10.187, 91m
5. Replaced RH, all 107 probes, all leveling mounts, all pyranometers (new upward PY41099 and downward PY23276, PAR (new# Q99253), added second battery, solar panel and charge controller for radio, Installed FGR-115RC radio, wavelink PRO890-12-40F02N4 12 dbi antenna, Crydom solid-state relay DC60S3 and SC32B. Antenna pointed at Kukri Hills remote site.
6. Moved SWRadOut to lower cross arm, next to sonic.
7. Replaced SM4M and loaded new program, FRL201112v1 at ????
8. Heights: SwRadIn = 310cm, PAR = 310, RH 290, AirTemp = 300, Wind = 345cm, Marbles = 100cm, Sonic height = 54cm, SwRadOut = 60cm, Soils = 0, 5 and 10 cm below surface.
9. Removed Sensit
10. Lat: 77 36.682 and Long 163 10.187, Elevation 91 m
11. On 12/29/2012, changed wiring for relay (wired incorrectly before), connect power from load on new Flexcharge charge controller, connect to 100 amp/hr battery. Installed new radio internal cable. Downloaded data from datalogger, and loaded new program, FRLM_201112_v2 (simplified radio timing).

Friis Hills Met Station (FRSM)

Filename:	FRSM_201112_SM001-002.DAT	
Station:	Friis Hills Met Station (FRSM)	
Author of this report:	Thomas Nylen	
File Period:	12/21/2010 10:15 to 12/14/2011 11:15	
Sampling Frequency:	wind every 4 sec; others: every 30 sec	
Averaging and Output Interval:	every 15 min	
Program Name:	frs1011v1.dld	
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:
1. CR10X 12 secs ahead. Changed at 12/19/2011 1018.
2. Wind Pointing north, declination at site is 152 degrees
3. Swapped out RH head, pressure and CR10X. Replaced wind, but was not working. Turns out the new CR10X did not work properly with the CR10X panel, and must have shorted something out in the panel. Replaced old guts of CR10X in January (turned off datalogger on Jan 27, 2012 @ 1100 and back on at 1102) , but still does not work. Need new datalogger with it panel.
4. Loaded new program FRSM_201112_v1 on 12/19/2011 1115.
5. Installed FGR-115RC radio, wavelink PRO890-12-40F02N4 12 dbi antenna, Crydom solid-state relay DC60S3 and SC32B. Antenna pointed at Kukri Hills remote site.
6. Swapped SM4m on Jan 27. 2012 @ 1115
7. Rotated wind 10 degrees CCW and radio antenna 5 degrees CCW on Jan 27. 2012. Tighten Nu-rail on center post/cross arm.

Garwood/Miers Valley Met Station (GADM/MISM)

Filename:	GADM_201112_SM001-002.dat	
Station:	Garwood Valley Met Station (GADM)	
Author of this report:	Thomas Nylen	
File Period:	01/27/2011 15:45 to 01/11/2012 11:00	
Sampling Frequency:	wind every 4 secs.; ultrasonic every 1 hr; others every 30 secs.	
Averaging and Output Interval:	every 15 minutes	
Program Name	GAD1011V1.CSI (new program: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) – **PY28370**	ok
8	mean solar flux going up (W/m^2) – **PY18656**	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) - Q9916	divide by 200, multiply by 306.60
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:
1. Turned off (~01/11/2012 11:00) and disassembled the station. It will be moved to Miers Valley.
2. CR10 ~8 minutes behind.
3. Ultrasonic ranger 93 cm from surface.
4. RH unplugged, replugged head back in and RH input values look corrected.
5. Wind monitor pointing north
6. Lar: 78.03844, Long: 164.32896, Elev:29m
7. New station established in Miers Valley on jan 13, 2012. Original location is Lat: 78 05.985, Long: 163 47.726 and Elevation: 179.1m. Moved to new location on Jan 28, 2012, better line of sight with stream gauge for telemetry. New location is Lat: 78 06.068, Long: 163 47.253 and Elev: 202.3m
8. Replaced RH head and wind monitor with new station.
9. Loaded new program, MISM_201112_v1.dld on Jan 28, 2012 @ 1400.
10. Adjusted time on the datalogger ahead 30 seconds on Jan 28, 2012 @ 1359.
11. Instrument heights for new station: Upward pyranometer and Quantum = 286 cm, downward pyranomter = 80cm, AirT3m/RH3m = 282cm and Wind = 319cm

Howard Glacier Met Station (HODM)

Filename:	HODM_201112_SM001-002.dat	
Station:	Howard Glacier Met Station (HODM)	
Author of this report:	Thomas Nylen	
File Period:	01/13/2011 15:45 to 12/30/2011 13:30	
Sampling Frequency:	sonic every 60 min, wind every 4 sec; others: every 30 sec	
Averaging and Output Interval:	every 15 minutes	
Program Name:	Hod1011v1.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) - **30884F3**	divide by 100; multiply by 120.77
8	mean solar flux going up (W/m^2) - **32057F3**	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)	o1
16	ice temperature @ 100cm (original depth, mV*0.01)	o1
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:
1. Visited station on Nov 5, 2011 at 1330. Left at 1341
2. Input values look good.
3. Datalogger clock is 5 min and 52 secs fast, changed at 11/05/2011 @ 1331.
4. Wind alignment was checked at 11/05/2011 @ 1334, and is pointing north.
5. Sonic sensor depth is 145.7 cm. The battery box might be partially under the sonic.
6. Ice stake height is 184.0, 184.0, 184.1, 184 (with board). Top ice probe (originally 50 cm in ice) has melted out and the 1m probe is near the surface.
7. SM4M swapped at 11/05/2011 @ 1339.
8. Lat: S77 40.268 and Long: E163 04.625
9. Moved station to approximately the original location on Dec 30, 2011. Installed 3 x 14' 1.5" aluminum poles and attached new couplings to the end of the legs. Placed couplings over the poles. Station now at the surface. Lower during every visit. Rotated the station so the sonic and upper cross arms and one of the legs of the station are pointing north. Sensors were repositioned to roughly correspond to their proper heights. SwRadOut moved to lower cross-arm, next to sonic.
10. Datalogger turned off on Dec 30, 2011 at 0945 and turned back on before 1445.
11. Replaced wind and RH heads.
12. Added internal radio pigtail radio cable on Jan 20, 2012. Downloaded data and swapped storage modules. New SM4M set to Ring Mode.

Lake Hoare Met Station (HOEM)

Filename:	HOEM_201112_SM001.dat	
Station:	Lake Hoare (HOEM)	
Author of this report:	Thomas Nylen	
File Period:	01/30/2011 21:30 (2011.081906)	
Sampling Frequency:	sonic every 60 min, wind every 4 sec; prec every 1 minute, others, every 30 sec	
Averaging and Output Interval:	every 15 minutes	
Program Name:	Hoe1011v3	
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 air temp @ 1 meter (C)	rclow
8	mean solar flux coming down (W/m^2) – **PY28349**	ok
9	mean solar flux going up (W/m^2) – **PY28347**	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	mean P.A.R. (micromols/s/m2) –**Q30804**	divide by 200, multiply by 225.32
17	mean soil temperature @ 0 cm	rclow
18	mean soil temperature @ 5 cm	rclow
19	mean soil temperature @ 10 cm	rclow
20	sample station barometric pressure (mbar)	ok
21	mean temperature difference 1&3 m (C)	multiply -1
22	distance to surface (m)	measurement * -100
23	Prec Accum Real-Time, Not Real-Time – Total	o1
24	Prec Accum. Not Real-Time – Total	o1
25	Prec Accum. Total Non Real-Time	o1
26	Prec Bucket Real-Time – Average	o1
27	Prec Sample Bucket Non Real-Time	Measurement – Previous Measurement
28	Prec Status	o1
29	sample of battery voltage	ol

Notes:
1. Visited station Oct 30, 2011, time of arrival 13:23
2. CR10X clock ahead 10 minutes and 35 secs, adjusted at 13:28:00
3. Checked input values at 13:28, input values look good.
4. Wind vain pointing north
5. Ultrasonic height: 53.7cm
6. Swapped out SM16M with SM4M at 13:33, no new program loaded.
7. GPS position: S 77 37.523 and E 162 54.028
8. Duplicate line at the end of the file. Ignore last

Filename:	HOEM_201112_SM002.dat
Station:	Lake Hoare (HOEM)

Author of this report:		Thomas Nylen	
File Period:		10/30/2011 @ 1345 to 11/9/2011 15:30	
Sampling Frequency:		sonic every 60 min, wind every 4 sec; prec every 1 minute, others, every 30 sec	
Averaging and Output Interval:		every 15 minutes	
Program Name:		Hoe1011v3	
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 air temp @ 1 meter (C)		rclow
8	mean solar flux coming down (W/m^2) – **PY28349**		ok
9	mean solar flux going up (W/m^2) – **PY28347**		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	mean P.A.R. (mmols/s/m2) **Q30804 (Q17248 last 5 lines)**		divide by 200, multiply by 225.32
17	mean soil temperature @ 0 cm		rclow
18	mean soil temperature @ 5 cm		rclow
19	mean soil temperature @ 10 cm		rclow
20	sample station barometric pressure (mbar)		ok
21	mean temperature difference 1&3 m (C)		multiply -1
22	distance to surface (m)		measurement * -100
23	Prec Accum Real-Time, Not Real-Time – Total		o1
24	Prec Accum. Not Real-Time – Total		o1
25	Prec Accum. Total Non Real-Time		o1
26	Prec Bucket Real-Time – Average		o1
27	Prec Sample Bucket Non Real-Time		Measurement – Previous Measurement
28	Prec Status		o1
29	sample of battery voltage		ol

Notes:
1. Visited station on Nov 9, 2011, time of arrival 13:00
2. CR10X clock ahead 19 secs, adjusted back at 13:10:00
3. Checked input values at 13:08, input values look good.
4. Wind vain pointing north
5. Ultrasonic height: 54.2cm
6. Swapped out upward pyranometer between 1345 and 1353. Old # is PY28349 and new# PY20561
7. Swapped out downward pyranometer between 1400 and 1415. Old # is PY28347 and new# PY20523
8. Swapped out Quantum between 1353 and 1400. Old # is Q30804 and new# Q17248. New constant is 5.22
9. Swapped out RH3m with recalibrated tip at 13:14:35
10. Swapped out wind between 1315 and 1345
11. Swapped out CR10X between 1530 and 1540. New program, hoe1112v1 was already loaded on CR10X. Loaded when power was turned back on. Grab last line of data from CR10x back at Lake Hoare.
12. Radio, radio antenna and solar were attached. Second battery was moved to radio. Relay switch was installed and connect to control port 7 and to the second battery. A second charge controller was installed and connected to second battery.
13. Replaced upward pyranometer and quantum with new ones that have new bolts on it.
14. Swapped out SM4M with SM16M at 15:45.

15. Moved sonic and downward pyranometer (with the quantum stand) to lower cross-arm. Moved quantum arm back up to west side of station, and installed quantum in mount on Dec 20, 2011. New height for sonic is 51.0 cm
16. Installed new 107AirT3m probe Dec 20, 2011. Old one was too short. The multiplexer stopped working briefly. Missing values during that interval.

Filename:	HOEM_201112_SM003-006.dat, HOEM_201112_T001	
Station:	Lake Hoare (HOEM)	
Author of this report:	Thomas Nylen	
File Period:	11/9/2011 15:45 to 02/12/2012 19:30	
Sampling Frequency:	sonic every 60 min, wind every 4 sec; prec every 1 minute, others, every 30 sec	
Averaging and Output Interval:	every 15 minutes	
Program Name:	HOE1112_v1, HOEM_201112_V3	
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 air temp @ 1 meter (C)	rclow
8	mean solar flux coming down (W/m^2) – **PY28349**	ok
9	mean solar flux going up (W/m^2) – **PY28347**	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	mean P.A.R. (mmols/s/m2) **Q17248**	divide by 200, multiply by 317.70
17	mean soil temperature @ 0 cm	rclow
18	mean soil temperature @ 5 cm	rclow
19	mean soil temperature @ 10 cm	rclow
20	sample station barometric pressure (mbar)	ok
21	mean temperature difference 1&3 m (C)	multiply -1
22	distance to surface (m)	measurement * -100
23	Prec Accum Real-Time, Not Real-Time – Total	o1
24	Prec Accum. Not Real-Time – Total	o1
25	Prec Accum. Total Non Real-Time	o1
26	Prec Bucket Real-Time – Average	o1
27	Prec Sample Bucket Non Real-Time	Measurement – Previous Measurement
28	Prec Status	o1
29	sample of battery voltage	ol

1. Visited station on Jan 26, 2012, time of arrival 08:45
2. Swapped SM4M for SM16M at 0900, powering station off and on, and loaded new program, HOEM_201112_V3, which changes the download times one hour ahead. Storage modele is set to Ring Mode.
3. Removed yagi radio antenna. Might swap it with the omni radio antenna at Lower Onyx.
4. No missing data
5. Station not responding on after 02/12/2012

Lake Hoare Theta Soil Station (LHS1 & LHS2)

Filename:		
Station:	Lake Hoare Soil Station (LHS2)	
Author of this report:	Thomas Nylen	
File Period:	1/28/2003 12:00:00 to 1/30/2007 08:00:00	
Sampling Frequency:	SoilTemp = 1 hr or 4 hr	
Averaging and Output Interval:	SoilTemp = 1 hr or 4 hr	
Program Name	?????	
1	Array	o1
2	Year	ok
3	Day	ok
4	Time	ok
5	SoilTemp_1	ok
6	SoilTemp_2	ok
7	SoilTemp_3	ok
8	SoilTemp_4	ok

Notes:
1) Do not know the configuration of this station.
2) Processed all of the data going back to 2003
3) Various gaps and duplicate data lines in the data.

Filename:	theta_hoare03-04.dat, lhtheta0405.DAT, LHtheta0506.xls, LKHoare.xls	
Station:	Lake Hoare Theta Station (LHS1)	
Author of this report:	Thomas Nylen	
File Period:	1/28/2003 12:00:00 to 1/30/2007 08:00:00	
Sampling Frequency:	Theta = 24 hrs	
Averaging and Output Interval:	Theta = 24 hrs	
Program Name	?????	
1	Array	o1
2	Year	ok
3	Day	ok
4	Time	ok
5	ThetaProbe_1	ok
6	ThetaProbe_2	ok
7	ThetaProbe_3	ok
8	ThetaProbe_4	ok

Notes:
1) Do not know the configuration of this station.
2) Processed all of the data going back to 2003

Lake Hoare TDR Station (HTDR)

Filename:	HTDR_201112_SM001-038	
Station:	Lake Hoare TDR Station (HTDR)	
Author of this report:	Thomas Nylen	
File Period:	01/25/2011 15:00 to 08/22/2011 18:00	
Sampling Frequency:	60 secs for temps; TDR and Sonic, once every 6 hours	
Averaging and Output Interval:	every 15 minutes	
Program Name	TDR1011V1.bak	
1	array I.D.	o1
2	year	ok
3	day	ok
4	time	ok
5	Soil temperature 1 (C)	rclow
6	Soil temperature 2 (C)	rclow
7	Soil temperature 3 (C)	rclow
8	Soil temperature 4 (C)	rclow
9	Soil temperature 5 (C)	rclow
10	TDR 1 (water content)	Trend (0 to 100, -0.03 to 0.729, measured value*0.1138-0.1758)
11	TDR 2 (water content)	Trend (0 to 100, -0.033 to 0.718, measured value*0.1138-0.1758)
12	TDR 3 (water content)	Trend (0 to 100, -0.029 to0.716, measured value*0.1138-0.1758)
13	TDR 4 (water content)	Trend (0 to 100, -0.007 to 0.794, measured value*0.1138-0.1758)
14	TDR 5 (water content)	Trend (0 to 100, -0.003 to 0.802, measured value*0.1138-0.1758)
15	AirT1m	ok pre-Nov 7, 2010, and rclow for values after Nov 7, 2010
16	sonic height (cm)	ok
17	internal temperature (C)	ok
18	sample of battery voltage	o1

Notes:
1. Station data downloaded at the end of the January 2011. Battery died in August, and program was lost. When power came back, the datalogger stopped functioning properly.
2. Connect power from Camera to TDR datalogger, and added a 75W panel to the overall system. Should be enough to make through the winter.

Taylor Glacier Met Station (TARM)

Filename:		TARM_201112_SM001.dat	
Station:		Taylor Glacier Met Station (TARM)	
Author of this report:		Thomas Nylen	
File Period:		01/21/2011 12:15 to 11/04/2011 12:00	
Sampling Frequency:		depth every 60 minutes, wind every 4 secs.; others: every 30 secs.	
Averaging and Output Interval:		every 15 minutes	
Program Name		tar1011v1.dld	
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) – **29777F3**		divide by 100; multiply by 119.33
10	mean solar flux going up (W/m^2) - **29776F3**		divide by 100; multiply by 119.05
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		ok
18	surface temperature internal thermister 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		o1

Notes:
1.
2. Reset datalogger clock - 5 min 12 secs on 11/04/2011 11:54
3. Input values look good
4. Wind pointing north (11/04/2011 1159)
5. Sonic depth 132.2
6. Ice temp stake height: 115.9, 115.8, 115.7, 115.7 cm with board
7. SM swapped on 11/04/2011 1201.
8. Lat: S 77 44.4011 and Long: E 162 07.914

Filename:		TARM_201112_SM002-004.dat	
Station:		Taylor Glacier Met Station (TARM)	
Author of this report:		Thomas Nylen	
File Period:		11/04/2011 12:15 to 01/21/2012 10:45	
Sampling Frequency:		depth every 60 minutes, wind every 4 secs.; others: every 30 secs.	
Averaging and Output Interval:		every 15 minutes	
Program Name		tar1011v1.dld (New: 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) – **29777F3 (new 32057f3)**	divide by 100; multiply by 119.33 (113.38)
10	mean solar flux going up (W/m^2) - **29776F3 (new 29762f3)**	divide by 100; multiply by 119.05 (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	ok
18	surface temperature internal thermister 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	o1

Notes:
1. Turned off station just after 12/2/2011 1000. Moved to original location. Installed 3 x 14' 1.5" aluminum poles and an attached new couplings to the end of the legs. Placed couplings over the poles. Station now at the surface. Lower during every visit. Rotated the station so the sonic and upper cross arms and one of the legs of the station are pointing north. Sensors were repositioned to roughly correspond to their proper heights. SwRadOut moved to lower cross-arm, next to sonic.
2. Replaced datalogger, RH heads, SwRadIn (32057f3) and SwRadOut (29762f3) and wind while station was off.
3. Turned datalogger back on 12/02/2011 13:30. New CR10X time is corrected. Existing program, TAR1011v1 was loaded at LH before it was installed.
4. Input values look good
5. Checked wind direction. Did not quite get one of the station's legs oriented directly north, clockwise about 5-10 degrees.
6. New sensor heights: SwRadIn = 315cm, SwRadOut = 61 cm, Apogee = 36 cm, AirT1m = 100 cm, RH1m = 110 cm, Wind hor
7. Ice temp stake height: 115.9, 115.8, 115.7, 115.7 cm with board
8. SM swapped on 11/04/2011 1201.
9. Lat: S 77 44.4011 and Long: E 162 07.914.
10. Visited station on Jan 12, 2012. Added radio, 12 dbi antenna, internal and external radio cable, bulkhead, Power for radio from Sw12V and control from C7.
11. Loaded new program, TARM_201112_V1 and swapped module, which is now in ring mode.

Lake Vanda Met Station (VAAM)

Filename:	VAAM_201112_SM001-002.dat	
Station:	Lake Vanda Met Station (VAAM)	
Author of this report:	Thomas Nylen	
File Period:	11/29/2010 12:00 to 12/17/2011 15:30	
Sampling Frequency:	wind every 4 secs.; ultrasonic every 1 hr; others every 30 secs.	
Averaging and Output Interval:	every 15 minutes	
Program Name	vaa1011v1 (new program: 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) - **PY40424**	ok
7	mean solar flux going up (W/m^2) - **PY33485**	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) -**Q30794 (last line-Q30806)**	divide by 200, multiply by 223.13 (221.34)
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	o1

Notes:
1. No missing data, values look good.
2. CR10X behind 14 minutes and 11 seconds. Corrected by radio on Dec 17, 2011 @ 20:16:37
3. Input values checked on Dec 17, 2011 @ 1405, input values look good
4. Wind box pointing north
5. Ultrasonic height is 65.1 cm (no snow)
6. Moved ultrasonic ranger to a new arm off the existing lower arm. The height is slightly lower. The downward pyranometer was placed on the same new arm, with a new mount (new larger set screw). New height???. The pyranometer stand was sawed in half, and the upward pyranometer mount was replaced with a new one with a larger set screw. The upperward facing pyranometer and sonic were leveled. **Need to check the downward facing pyranometer.**
7. Replaced RH sensor head
8. Installed freewave radio and cable (internal cable, bulkhead and external cable). Power for radio from Sw12V and control from C7. **Need to install yagi antenna.**
9. **Need to install solar panel higher.**
10. Visited station again on Jan 6, 2012. Added radio 12 dbi antenna, pointed towards mt fleming, added 2ft internal radio cable, moved solar panel hight, so less shadow from guy wire, checked voltaged in regulator, 14.3 V. Checked and tighted all connections. All looks good.

Lake Vida Met Station (VIAM)

Filename:	VIAM_201112_SM001.dat	
Station:	Lake Vida Met Station (VIAM)	
Author of this report:	Thomas Nylen	
File Period:	11/19/2010 13:30 to 01/07/2012 11:00	
Sampling Frequency:	wind every 4 secs.; ultrasonic every 1 hr; others every 30 secs.	
Averaging and Output Interval:	every 15 minutes	
Program Name	via1011v1	
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) – **PY20523**	ok
8	mean solar flux going up (W/m^2) – **PY45668**	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) - **Q30800**	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:
1. First line of file is a duplicate of the last line of the previous file. Remove first line of this file.
2. Time adjusted back 10 minutes and 11 seconds on 01/17/2012 1101.
3. Input values and wind alignment on 01/17/2012 1101 appear correct.
4. Sonic sensor depth = 52.0 cm.
5. Moved station to new location, about 100m NNWof original location. Water was very close to the southern leg, and the soil temp probes were in the water. Rotated station so lower cross arm is pointing north. Also, rotated top arm, oriented in the same direction as the lower arm. Wind monitor is now on the south side of the arm. Replaced swrad stands and leveling mounts (larger set screws), moving downward SWRad to new arm next to ultrasonic. Moved solar panel to main post above enclosure. Lowered enclosure 5 cms. Relocated soil probes to north of the station. Heights, Up facing Pyranometer = 295cm,. downward Pyranometer = 56 cm, RH3m = 293 cm, wind = 318cm
6. Maintenance: on January 07, 2012 swapped upward pyranometer sensor (old #PY51356 and new PY23271) and swapped downward pyranometer sensor (old# PY56364 and new PY20565 while station was off. Replaced RH head and wind monitor.
7. Station power off to move station. Off between.
8. New location Lat: 77.37787, Long: 161.80058 and Elev: 358m

Appendix

Array Ids

Location Codes					
Array ID	**4 ch ID**	**Name**	**Date of Station Establishment**	**Lat**	**Long**
1	HOEM	Lake Hoare (HOEM)	Dec 1, 1993 by Peter Doran		
2	FRLM	Lake Fryxell (FRLM)	Jan 6, 1994 by Peter Doran		
3	BOYM	Lake Bonney (BOYM)	November 24, 1993 by Peter Doran		
4	COHM	Commonwealth Glacier (COHM)	November 22, 1993 by Peter Doran		
5	HODM	Howard Glacier (HODM)	November 20, 1993 by Peter Doran		
6	TARM	Taylor Glacier (TARM)	November 21, 1994 by Peter Doran		
7	VAAM	Lake Vanda (VAAM)	November 24, 1994 by Peter Doran		
8	BRHM	Lake Brownworth (BRHM)	November 13, 1996 by Peter Doran and DJ Osborne		
9	EXEM	Explorer's Cove (EXEM)	Nov 21, 1997 by Peter Doran, DJ Osborne and K. Sauter		
10	CAAM	Canada Glacier (without Eddy Sensors) CAAM	Nov 20, 1995 by Karen Lewis; reinstalled Jan 13, 1998		
11	VIAM	Lake Vida (VIAM)	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	Fryxell Snow Fence (F6MM)	Changed to F6 Met and F6 Sensir by Hassan		
18	BENM	Beacon Valley (BENM)			
19	LHPM	Retired Lake Hoare Precipitation (LHPM)	January 26, 2002 by Thomas Nylen		
20	BRMM	Bonney Snow Fence (BRMM)	Changed to Bonney Riegel Met and Sensit by Hassan		
21	FRSM	Friis (FRSM)	Installed by Cuffey et al., ????	77.747	161.51634
22	FLMM	Mt. Fleming (FLMM)	Installed 10/16/06 by Univ of Wisc AWS		
25	GADM	Garwood Valley (GADM)	Installed by Peter Doran		
26	GAFM	Garwood Valley Ice Cliff (GAFM)	December 2010 by Thomas Nylen		
27	HTDR	Lake Hoare TDR Station	08-09 Season by Hassan		
92	EXSM	Explorers Cove Sensity (EXSM)	Installed by Hassan		
95	F6SM	F6 Snowfence Sensit (F6SM)			
96		Lake Fryxell Sensit	Data combined with Fryxell station data		
97		RETIRED Lake Hoare Sensit	Retired 12/2010		
98		RETIRED Lake Bonney Sensit	Retired 12/2010		
99	BRSM	Bonney Reigel Sensit (BRSM)	Hassan		
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	LH Soil station 1 Theta	1/28/2003		
115	LHS2	LH Soil station 3 Soil	1/28/2003		

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 |