Documentation and Task Lists

File description and task list for Cape Hallett Met 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 bogus,
flag= reasonable number but needs a note attached concerning its collection:

Array I.D. meaning:

First and Second Digit 01 = Cape Hallett

Hardware Notes:

Filename: Station: Date of Establishment: Author of this report: File Period: Sampling Frequency:		cht0341.dat Cape Hallett met station December 17, 2003 by Tim Fitzgibbon and Thomas Nylen Thomas Nylen December 17, 2003 (351) @ 1115 to December 19, 2003 (353) @ 0900 wind speed every 4 secs.; pressure every 15 min, sonic every 3600 secs;		
Averaging and Output Interval: Program Name:		every 15 min cht034v1 (Program Signature: 12874)		
1.	array I.D.			
2.	day			
3.	time			
4.	mean air temp. @ 2.7	5 meters (C)		
5.	mean R.H. @ 2.75 m	eters (%)		
6.	mean solar flux comir	mean solar flux coming down (W/m2) @ 3.05 meters – PY45668		
7.	mean solar flux going up (W/m2)) @ 2.65 meters – PY45665			
8.	mean horizontal wind speed (m/s) @ 3.30 meters			
9.	resultant mean wind speed (m/s) @ 3.30 meters o1			
10.	resultant mean wind direction (degrees from north) @ 3.30 meters ok			
11.	standard deviation of wind direction (degrees) @ 3.30 meters ok			
12.	maximum wind speed ok	1 (m/s) @ 3.30 meters		
13.	minimum wind speed ok	(m/s) @ 3.30 meters		
14.	mean P.A.R. (microm divide by 200, m	iols/s/m2) @ 2.81 meters – Q32567 ultiply by 275.48		
15.	mean soil temperature rclow	e @ 5 cm in soil (C)		
16.	mean soil temperature rclow	e @ 10 cm in soil (C)		
17.	surface height @ 0.98 height *100	31 cm (cm)		
18.	Pressure (mbars) ok			
19.	sample of battery volt o1	age		
notes: 1) Cor	nstructed station on De	cember 18, 2003.		

- 2) 3)
- 4)
- No Missing data Adjusted clock -39 seconds on January 28, 2004 (29) @ 1354 Check input values on January 28, 2004 (29) @ 1354, everything looked good Check wind direction on January 28, 2004 (29) @ 1355, direction of monitor pointing north. Replaced one SM4M storage modules for another on January 28, 2004 (28) @ 1400 5)
- 6)

Filename: Station: Date of Establishment: Author of this report: File Period: Sampling Frequency:		ishment: report: juency:	cht0342.dat Cape Hallett met station December 17, 2003 by Tim Fitzgibbon and Thomas Nylen Thomas Nylen December 19, 2003 (353) @ 0915 to January 20, 2004 (20) @ 1215 wind speed every 4 secs.; pressure every 15 min, sonic every 3600 secs;	
Averaging and Output Interval: Program Name:		l Output Interval: e:	others: every 30 secs. every 15 min cht034v1 (Program Signature: 12874)	
	1.	array I.D.		
	2.	ol day		
		ok		
	3.	time		
	1	OK mean air temp @ 27	$\frac{1}{2}$ meters (C)	
	4.	rclow	5 meters (C)	
	5.	mean R.H. @ 2.75 m	ueters (%)	
		ok		
	6.	mean solar flux comi	ng down (W/m2) @ 3.05 meters – PY45668	
	7	OK mean solar flux going	$(W/m^2) = 0.265 \text{ meters} - PY45665$	
	/.	ok	5 up(47 m2) = 2.05 models + 1.45005	
	8.	mean horizontal wind	l speed (m/s) @ 3.30 meters	
	0	ok		
	9.	resultant mean wind s	speed (m/s) @ 3.30 meters	
	10.	resultant mean wind	direction (degrees from north) @ 3.30 meters	
		ok		
	11.	standard deviation of	wind direction (degrees) @ 3.30 meters	
	12	Ok maximum wind anaa	$d(m/s) \otimes 220$ mators	
	12.	ok	1 (III/S) @ 5.50 IIIeleIS	
	13.	minimum wind speed	d (m/s) @ 3.30 meters	
		ok		
	14.	mean P.A.R. (micron	nols/s/m2) @ 2.81 meters – Q32567	
	15.	mean soil temperatur	re @ 5 cm in soil (C)	
		rclow		
	16.	mean soil temperatur	e @ 10 cm in soil (C)	
	17	rclow		
	1/.	surface height @ 0.98 height *100	31 cm (cm)	
	18.	Pressure (mbars)		
		ok		
	19.	sample of battery vol	tage	
		ol		
notes:				
1)	No	Missing data		

No Missing data
 Replaced one SM4M storage modules for another on January 20, 2004 (20) @ 1215

Filename: Station: Date of Establishment: Author of this report: File Period: Sampling Frequency: Averaging and Output Interval:		cht04051.dat Cape Hallett met station December 17, 2003 by Tim Fitzgibbon and Thomas Nylen Thomas Nylen January 20, 2004 (20) @ 1230 to November 10, 2004 (315) @ 1230	
		others: every 30 secs. every 15 min	
Program Nan	ne:	cht034v1 (Program Signature: 12874)	
1.	array I.D.		
	o1		
2.	day		
	ok		
3.	time		
	ok		
4.	mean air temp. @ 2.7	75 meters (C)	
_	rclow		
5.	mean R.H. @ 2.75 n	leters (%)	
6	OK maan color flux com	$(m_{2}, d_{0}, u_{m}) \otimes 2.05 \text{ maters} = DV / 5669$	
0.	ok	$\sin (\omega / \sin 2) = 5.05 \ \sin (\omega / \sin 2) = 143008$	
7	UK meen coler flux goin	(W/m^2)) @ 2.65 mators DV 45665	
7.	ok	g up (w/mz)) @ 2.05 meters=1 145005	
8	mean horizontal win	d sneed $(m/s) @ 3.30$ meters	
0.	ok	1 speed (III/s) @ 5.50 meters	
9	resultant mean wind	speed (m/s) @ 3.30 meters	
2.	ol		
10	resultant mean wind	direction (degrees from north) @ 3 30 meters	
10.	ok		
11.	standard deviation of	wind direction (degrees) @ 3.30 meters	
	ok		
12.	. maximum wind spee	d (m/s) @ 3.30 meters	
	ok		
13.	. minimum wind spee	d (m/s) @ 3.30 meters	
	ok		
14.	. mean P.A.R. (micror	nols/s/m2) @ 2.81 meters – Q32567	
	divide by 200, n	ultiply by 275.48	
15.	mean soil temperatur	re @ 5 cm in soil (C)	
16	mean soil temperatu	re @ 10 cm in soil (C)	
10.	rclow		
17.	surface height (cm) (@ 95.5 cm	
10	height (m) x 100		
18.	Pressure (mbars)		
10	OK		
19.	sample of battery vol	tage	
	01		
notes:	Missing data		

No Missing data
 Replaced one SM4M storage modules for another on November 10, 2004 (20) @ 1230

Filename: Station: Date of Establishment: Author of this report: File Period: Sampling Frequency:	cht04052.dat Cape Hallett Meteorological Station December 17, 2003 by Tim Fitzgibbon and Thomas Nylen Thomas Nylen November 10, 2004 (315) @ 1245 to Dec 8, 2004 (343) @ 1345 wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs; others: every 30 secs		
Averaging and Output Interval: Program Name:	every 15 min cht034v1 (Program Signature: 12874)		
1. array I.D.			
2. day			
3. time			
4. mean air temp. @ 2.75	5 meters (C)		
5. mean R.H. @ 2.75 me	eters (%)		
6. mean solar flux comir ok	ng down (W/m2) @ 3.05 meters – PY45668		
7. mean solar flux going	up (W/m2)) @ 2.65 meters – PY45665		
8. mean horizontal wind ok	mean horizontal wind speed (m/s) @ 3.30 meters		
9. resultant mean wind s	resultant mean wind speed (m/s) @ 3.30 meters		
10. resultant mean wind d	irection (degrees from north) @ 3.30 meters		
11. standard deviation of ok	wind direction (degrees) @ 3.30 meters		
12. maximum wind speed	(m/s) @ 3.30 meters		
13. minimum wind speed	(m/s) @ 3.30 meters		
14. mean P.A.R. (microm divide by 200. mi	ols/s/m2) @ 2.81 meters – Q32567 ultiply by 275.48		
15. mean soil temperature rclow	e = 5 cm in soil (C)		
16. mean soil temperature rclow	e @ 10 cm in soil (C)		
17. surface height (cm) @ height (m) x 100	⁹ 95.5 cm		
18. Pressure (mbars) ok			
19. sample of battery volt o1	age		
notes: 1) No Missing data			

- 1) 2) The time on CR10X was behind GPS time by 1 minute and 2 seconds. Adjusted CR10X to GPS time on December 8, 2004 @ 1343.
- Checked input values on December 8, 2004 @ 1345, everything looked good. Check wind direction on December 8, 2004 @ 1347. It is still pointing north. Sonic sensor height on on December 8, 2004 is 95.5 cm above the surface. 3)
- 4)
- 5)

- 6) Loaded new program, CHT045v1, on December 8, 2004 @ 1400. New program signature is 13329. Added some instructions to record daily max and min temps and daily max winds in the input channels. The values are reset at 1000 every day. Added if statement to sonic to not measure when voltage is below 11.5 V. The pressure measurement the first 15 minutes after loading new program is bad.
- 7) Replaced one SM4M storage modules for another on November 10, 2004 (20) @ 1230
- 8) Tighten guide wires on main mast and sonic ranger.

Filename:		cht04053.dat
Station:		Cape Hallett Meteorological Station
Date of Establishment:		December 17, 2003 by Tim Fitzgibbon and Thomas Nylen
Author of this report:		Thomas Nylen
File Period:		Dec 8, 2004 (343) @ 1400
Sampling Fre	equency:	wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs;
1 0		others: every 30 secs.
Averaging an	d Output Interval:	every 15 min
Program Nan	ne:	cht045v1
	ID	
1.	array I.D.	
2	10	
2.	day	
2	OK time e	
5.	ume	
4	OK	
4.	mean air temp. @ 2.7:	5 meters (C)
-	rclow	
5.	mean R.H. @ 2.75 me	eters (%)
6	OK .	$1 (\mathbf{M} / \mathbf{A}) \oplus 2.05 (\mathbf{M} / \mathbf{A}) \oplus (\mathbf{M} / \mathbf{A})$
6.	mean solar flux comir	1g down (W/m2) @ 3.05 meters - PY45668
-	OK	
7.	mean solar flux going	$(w/m^2)) @ 2.65 meters - PY45665$
0	OK	
8.	mean horizontal wind	speed (m/s) ($@$ 3.30 meters
0	OK	
9.	resultant mean wind s	peed (m/s) @ 3.30 meters
	01	
10.	. resultant mean wind d	arection (degrees from north) @ 3.30 meters
	OK	
11.	. standard deviation of	wind direction (degrees) @ 3.30 meters
10	OK	
12.	. maximum wind speed	I(m/s) @ 3.30 meters ok
13.	. minimum wind speed	(m/s) @ 3.30 meters
	ok DAD ()	
14.	. mean P.A.R. (microm	$\frac{1}{100}$ (015/s/m2) @ 2.81 meters – Q32567
	divide by 200, m	altiply by 275.48
15.	. mean soil temperature	e @ 5 cm in soil (C)
1.5	rclow	
16.	. mean soil temperature	e @ 10 cm in soil(C)
. –	rclow	
17.	. surface height (cm) @	95.5 cm
10	height (m) x 100	
18.	. Pressure (mbars)	
10	OK	
19.	. sample of battery volt	age
	01	
notos		
notes.		

1) No Missing data

Filename: Station: Date of Establishment: Author of this report: File Period: Sampling Frequency: Averaging and Output Interval: Program Name:		cht04054.dat Cape Hallett Meteorological Station December 17, 2003 by Tim Fitzgibbon and Thomas Nylen Thomas Nylen Dec 8, 2004 (343) @ 1400 to Dec 15, 2004 (350) @ 1015 wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs; others: every 30 secs. every 15 min cht045v1	
2.	day		
3.	time		
4.	mean air temp. @ 2.7	75 meters (C)	
5.	mean R.H. @ 2.75 m	neters (%)	
6.	ок mean solar flux coming down (W/m2) @ 3.05 meters – PY45668		
7.	mean solar flux going up (W/m2)) @ 2.65 meters – PY45665		
8.	mean horizontal wind speed (m/s) @ 3.30 meters		
9.	resultant mean wind speed (m/s) @ 3.30 meters		
10.	resultant mean wind	direction (degrees from north) @ 3.30 meters	
11.	standard deviation of wind direction (degrees) @ 3.30 meters		
12.	. maximum wind speed (m/s) @ 3.30 meters		
13.	minimum wind speed	d (m/s) @ 3.30 meters	
14.	. mean P.A.R. (micromols/s/m2) @ 2.81 meters – Q32567 divide by 200, multiply by 275.48		
15.	mean soil temperatur rclow	re @ 5 cm in soil (C)	
16.	mean soil temperatur rclow	re @ 10 cm in soil (C)	
17.	surface height (cm) (height (m) x 100	@ 95.5 cm	
18.	Pressure (mbars) ok		
19.	sample of battery vol o1	tage	
notes:			

1) No Missing data

Filename: Station: Date of Establishment: Author of this report: File Period: Sampling Frequency:		cht04055.dat Cape Hallett Meteorological Station December 17, 2003 by Tim Fitzgibbon and Thomas Nylen Thomas Nylen Dec 15, 2004 (350) @ 1030 to January 25, 2005 @ 1145 wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs; others: every 30 secs. every 15 min cht045v1	
Averaging and Output Interval: Program Name:			
1.	array I.D.		
2.	day		
3.	time		
4.	ok mean air temp. @ 2.7	5 meters (C)	
5.	rclow mean R.H. @ 2.75 meters (%)		
6.	ok mean solar flux coming down (W/m2) @ 3.05 meters – PY45668		
7.	mean solar flux going up (W/m2)) @ 2.65 meters – PY45665		
8.	mean horizontal wind speed (m/s) @ 3.30 meters		
9.	resultant mean wind speed (m/s) @ 3.30 meters		
10.	. resultant mean wind direction (degrees from north) @ 3.30 meters		
11.	. standard deviation of wind direction (degrees) @ 3.30 meters		
12.	2. maximum wind speed (m/s) @ 3.30 meters		
13.	minimum wind speed	l (m/s) @ 3.30 meters	
14.	. mean P.A.R. (micromols/s/m2) @ 2.81 meters – Q32567 divide by 200 multiply by 275.48		
15.	mean soil temperatur rclow	e @ 5 cm in soil (C)	
16.	mean soil temperatur rclow	e @ 10 cm in soil (C)	
17.	surface height (cm) @ height (m) x 100	94.0 cm	
18.	Pressure (mbars)		
19.	sample of battery volt	tage	
notes:			

1) No Missing data

Filename: Station:		cht00561.dat Cape Hallett Meteorological Station	
Author of this report:		The	
File Period	Teport.	Inomas Ryten January 25, 2005 @ 1200 to November 23, 2005 @ 0915	
Sampling Free	quency:	wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs;	
		others: every 30 secs.	
Averaging and Program Nam	l Output Interval: e:	every 15 min cht045v1	
1.	array I.D.		
2.	day		
	ok		
3.	time		
	ok		
4.	mean air temp. @ 2.7	5 meters (C)	
5	rclow	atom $(0/)$	
5.	ok	eters (%)	
6.	mean solar flux comi	ng down (W/m2) @ 3.05 meters – PY45668	
	ok		
7.	mean solar flux going up (W/m2)) @ 2.65 meters – PY45665 ok		
8.	mean horizontal wind speed (m/s) @ 3.30 meters ok		
9.	resultant mean wind s	peed (m/s) @ 3.30 meters	
10	ol		
10.	resultant mean wind d	lifection (degrees from north) @ 3.30 meters	
11	standard deviation of	wind direction (degrees) @ 3 30 meters	
	ok		
12.	maximum wind speed	d (m/s) @ 3.30 meters	
	ok		
13.	minimum wind speed	(m/s) @ 3.30 meters	
1.4	ok DAD (:		
14.	mean P.A.R. (microm	$101s/s/m^2$) @ 2.81 meters – Q3256/	
15	mean soil temperature	e @ 5 cm in soil (C)	
15.	rclow		
16.	mean soil temperature	e @ 10 cm in soil (C)	
17	rclow	04.0 cm	
17.	height (m) x 100	9 94.0 CIII	
18.	Pressure (mbars)		
	ok		
19.	sample of battery volt o1	age	
notes:			

- No Missing data Wind monitor blew apart (or was destroyed by flying debris) on August, 24 2005 @ 21:45. No other damage to the station was apparent. 1) 2)

Filename: Station: Date of Establishment: Author of this report: File Period: Sampling Frequency: Averaging and Output Interval:		cht00562.dat Cape Hallett Meteorological Station December 17, 2003 by Tim Fitzgibbon and Thomas Nylen Thomas Nylen November 23, 2005 @ 0930 to January 3, 2006 @ 1715 wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs; others: every 30 secs. every 15 min cht045v1
Program Nai	ine:	cm043V1
1.	array I.D.	
2	ol	
2.	day	
3.	time	
5.	ok	
4.	mean air temp. @ 2.7	5 meters (C)
	rclow	
5.	mean R.H. @ 2.75 m	eters (%)
<i>(</i>	ok	$1 \qquad (W/2) \oplus 2.05 \qquad (W/45556)$
6.	mean solar flux comit	$\log down (W/m2) @ 3.05 meters - PY45668$
7	UK meen soler flux going	(W/m^2)) @ 2.65 meters $PV/5665$
7.	ok	$up(w/m2)) \approx 2.05 meters - 1.145005$
8.	mean horizontal wind	speed (m/s) @ 3.30 meters
	ok	
9.	resultant mean wind s	peed (m/s) @ 3.30 meters
	01	
10). resultant mean wind d	irection (degrees from north) @ 3.30 meters
11	OK standard deviation of	wind dimetion (degrees) @ 2.20 meters
11	ok	which direction (degrees) @ 5.50 meters
12	. maximum wind speed	l (m/s) @ 3.30 meters
	ok	
13	. minimum wind speed	(m/s) @ 3.30 meters
	ok	
14	•. mean P.A.R. (microm	iols/s/m2) @ 2.81 meters – Q32567
	after Ian 3, 200	$0 \le 1700$, divide by 200, multiply by 275.48 @ 1700, divide by 200, multiply by 364.68
15	mean soil temperature	≈ 1700 , arviae by 200, manipry by 304.00
10	rclow	
16	. mean soil temperature	e @ 10 cm in soil (C)
	rclow	
17	. surface height (cm) @	94.0 cm
10	height (m) x 100	
18	ok (mbars)	
19	sample of hattery volt	age
17	ol	-0-
notes:		

- 1)
- No Missing data Wind monitor blew apart (or was destroyed by flying debris) on August, 24 2005 @ 21:45. The wind sensor was replaced on January 3, 2006 @ 1615. The datalogger was swapped for a recalibrated CR10X on January 3, 2005. 2)
- 3)

- 4) The upward and downward licor pyranometers were swapped for recalibrated sensors on January 3, 2005. The sensors were reversed when first installed between 1245 and 1630 on Jan 3, 2005. Data were either flagged as bad (if the sensors were swapped between 15-minute averaging period) or reversed. New sensor numbers are PY 31675 and PY 23270.
- 5) The Quantum (PAR) was swapped for recalibrated sensors on January 3, 2005. New sensor number is Q30806. The last 6 lines of the file were flagged as bad. Sensor was process of being switched. The last line was also flagged as bad, because the adjusted value was too high. Check next year's PAR results. The problem might
- 6) The RH probe was swapped out for a recalibrated probe on January 3, 2005.
- 7) Datalogger ahead by 2 minutes and 33 seconds. Time not adjusted.
- 8) Sonic depth is 93 cm from the surface to the sensor
- 9) Old program signature before swapping out CR10X was 13329 and the new signature after the swap is 9854.
- 10) SM4M (Storage Module) was swapped for another SM4M on Jan 3, 2006 @ 1715.