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:	cht0341.dat
Station:	Cape Hallett met station
Date of Establishment:	December 17, 2003 by Tim Fitzgibbon and Thomas Nylen
Author of this report:	Thomas Nylen
File Period:	December 17, 2003 (351) @ 1115 to December 19, 2003 (353) @ 0900
Sampling Frequency:	wind speed every 4 secs.; pressure every 15 min, sonic every 3600 secs; others: every 30 secs.
Averaging and Output Interval:	every 15 min
Program Name:	cht034v1 (Program Signature: 12874)

1. array I.D.
    o1
2. day
    ok
3. time
    ok
4. mean air temp. @ 2.75 meters (C)
    rclow
5. mean R.H. @ 2.75 meters (%)
    ok
6. mean solar flux coming 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 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 (m/s) @ 3.30 meters
    ok
13. minimum wind speed (m/s) @ 3.30 meters
    ok
14. mean P.A.R. (micromols/s/m2) @ 2.81 meters – Q32567
    divide by 200, multiply by 275.48
15. mean soil temperature @ 5 cm in soil (C)
    rclow
16. mean soil temperature @ 10 cm in soil (C)
    rclow
17. surface height @ 0.981 cm (cm)
    height *100
18. Pressure (mbars)
    ok
19. sample of battery voltage
    o1

notes:
1) Constructed station on December 18, 2003.
2) No Missing data
3) Adjusted clock -39 seconds on January 28, 2004 (29) @ 1354
4) Check input values on January 28, 2004 (29) @ 1354, everything looked good
5) Check wind direction on January 28, 2004 (29) @ 1355, direction of monitor pointing north.
6) Replaced one SM4M storage modules for another on January 28, 2004 (28) @ 1400

Filename: cht0342.dat
Station: Cape Hallett met station
Date of Establishment: December 17, 2003 by Tim Fitzgibbon and Thomas Nylen
Author of this report: Thomas Nylen
File Period: December 19, 2003 (353) @ 0915 to January 20, 2004 (20) @ 1215
Sampling Frequency: wind speed every 4 secs.; pressure every 15 min, sonic every 3600 secs;
                                   others: every 30 secs.
Averaging and Output Interval: every 15 min
Program Name: cht034v1 (Program Signature: 12874)

1. array I.D.
       o1
2. day
       ok
3. time
       ok
4. mean air temp. @ 2.75 meters (C)
       rclow
5. mean R.H. @ 2.75 meters (%)
       ok
6. mean solar flux coming 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 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 (m/s) @ 3.30 meters
       ok
13. minimum wind speed (m/s) @ 3.30 meters
       ok
14. mean P.A.R. (micromols/s/m2) @ 2.81 meters – Q32567
       divide by 200, multiply by 275.48
15. mean soil temperature @ 5 cm in soil (C)
       rclow
16. mean soil temperature @ 10 cm in soil (C)
       rclow
17. surface height @ 0.981 cm (cm)
       height *100
18. Pressure (mbars)
       ok
19. sample of battery voltage
       o1

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

Filename:	cht04051.dat
Station:	Cape Hallett met station
Date of Establishment:	December 17, 2003 by Tim Fitzgibbon and Thomas Nylen
Author of this report:	Thomas Nylen
File Period:	January 20, 2004 (20) @ 1230 to November 10, 2004 (315) @ 1230
Sampling Frequency:	wind speed every 4 secs.; pressure every 15 min, sonic every 3600 secs; others: every 30 secs.
Averaging and Output Interval:	every 15 min
Program Name:	cht034v1 (Program Signature: 12874)

1. array I.D.
    o1
2. day
    ok
3. time
    ok
4. mean air temp. @ 2.75 meters (C)
    rclow
5. mean R.H. @ 2.75 meters (%)
    ok
6. mean solar flux coming 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 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 (m/s) @ 3.30 meters
    ok
13. minimum wind speed (m/s) @ 3.30 meters
    ok
14. mean P.A.R. (micromols/s/m2) @ 2.81 meters – Q32567
    divide by 200, multiply by 275.48
15. mean soil temperature @ 5 cm in soil (C)
    rclow
16. mean soil temperature @ 10 cm in soil (C)
    rclow
17. surface height (cm) @ 95.5 cm
    height (m) x 100
18. Pressure (mbars)
    ok
19. sample of battery voltage
    o1

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

Filename: cht04052.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: November 10, 2004 (315) @ 1245 to Dec 8, 2004 (343) @ 1345
Sampling Frequency: wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs;
                                 others: every 30 secs.
Averaging and Output Interval: every 15 min
Program Name: cht034v1 (Program Signature: 12874)

1. array I.D.
        o1
2. day
        ok
3. time
        ok
4. mean air temp. @ 2.75 meters (C)
        rclow
5. mean R.H. @ 2.75 meters (%)
        ok
6. mean solar flux coming 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 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 (m/s) @ 3.30 meters
        ok
13. minimum wind speed (m/s) @ 3.30 meters
        ok
14. mean P.A.R. (micromols/s/m2) @ 2.81 meters – Q32567
        divide by 200, multiply by 275.48
15. mean soil temperature @ 5 cm in soil (C)
        rclow
16. mean soil temperature @ 10 cm in soil (C)
        rclow
17. surface height (cm) @ 95.5 cm
        height (m) x 100
18. Pressure (mbars)
        ok
19. sample of battery voltage
        o1

notes:
1)   No Missing data
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.
3)   Checked input values on December 8, 2004 @ 1345, everything looked good.
4)   Check wind direction on December 8, 2004 @ 1347. It is still pointing north.
5)   Sonic sensor height on on December 8, 2004 is 95.5 cm above the surface.

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 Frequency:	wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs; others: every 30 secs.
Averaging and Output Interval:	every 15 min
Program Name:	cht045v1

1. array I.D.
     o1
2. day
     ok
3. time
     ok
4. mean air temp. @ 2.75 meters (C)
     rclow
5. mean R.H. @ 2.75 meters (%)
     ok
6. mean solar flux coming 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 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 (m/s) @ 3.30 meters   ok
13. minimum wind speed (m/s) @ 3.30 meters
     ok
14. mean P.A.R. (micromols/s/m2) @ 2.81 meters – Q32567
     divide by 200, multiply by 275.48
15. mean soil temperature @ 5 cm in soil (C)
     rclow
16. mean soil temperature @ 10 cm in soil (C)
     rclow
17. surface height (cm) @ 95.5 cm
     height (m) x 100
18. Pressure (mbars)
     ok
19. sample of battery voltage
     o1

notes:
 1)   No Missing data

Filename:	cht04054.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 to Dec 15, 2004 (350) @ 1015
Sampling Frequency:	wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs; others: every 30 secs.
Averaging and Output Interval:	every 15 min
Program Name:	cht045v1

1. array I.D.
       o1
2. day
       ok
3. time
       ok
4. mean air temp. @ 2.75 meters (C)
       rclow
5. mean R.H. @ 2.75 meters (%)
       ok
6. mean solar flux coming 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 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 (m/s) @ 3.30 meters
       ok
13. minimum wind speed (m/s) @ 3.30 meters
       ok
14. mean P.A.R. (micromols/s/m2) @ 2.81 meters – Q32567
       divide by 200, multiply by 275.48
15. mean soil temperature @ 5 cm in soil (C)
       rclow
16. mean soil temperature @ 10 cm in soil (C)
       rclow
17. surface height (cm) @ 95.5 cm
       height (m) x 100
18. Pressure (mbars)
       ok
19. sample of battery voltage
       o1

notes:
 1)   No Missing data

Filename:	cht04055.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 15, 2004 (350) @ 1030 to January 25, 2005 @ 1145
Sampling Frequency:	wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs; others: every 30 secs.
Averaging and Output Interval:	every 15 min
Program Name:	cht045v1

1. array I.D.
   o1
2. day
   ok
3. time
   ok
4. mean air temp. @ 2.75 meters (C)
   rclow
5. mean R.H. @ 2.75 meters (%)
   ok
6. mean solar flux coming 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 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 (m/s) @ 3.30 meters
    ok
13. minimum wind speed (m/s) @ 3.30 meters
    ok
14. mean P.A.R. (micromols/s/m2) @ 2.81 meters – Q32567
    divide by 200, multiply by 275.48
15. mean soil temperature @ 5 cm in soil (C)
    rclow
16. mean soil temperature @ 10 cm in soil (C)
    rclow
17. surface height (cm) @ 94.0 cm
    height (m) x 100
18. Pressure (mbars)
    ok
19. sample of battery voltage
    o1

notes:
 1)   No Missing data

Filename: cht00561.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: January 25, 2005 @ 1200 to November 23, 2005 @ 0915
Sampling Frequency: wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs;
                                  others: every 30 secs.

Averaging and Output Interval: every 15 min
Program Name: cht045v1

1. array I.D.
    o1
2. day
    ok
3. time
    ok
4. mean air temp. @ 2.75 meters (C)
    rclow
5. mean R.H. @ 2.75 meters (%)
    ok
6. mean solar flux coming 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 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 (m/s) @ 3.30 meters
    ok
13. minimum wind speed (m/s) @ 3.30 meters
    ok
14. mean P.A.R. (micromols/s/m2) @ 2.81 meters – Q32567
    divide by 200, multiply by 275.48
15. mean soil temperature @ 5 cm in soil (C)
    rclow
16. mean soil temperature @ 10 cm in soil (C)
    rclow
17. surface height (cm) @ 94.0 cm
    height (m) x 100
18. Pressure (mbars)
    ok
19. sample of battery voltage
    o1

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

Filename:	cht00562.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:	November 23, 2005 @ 0930 to January 3, 2006 @ 1715
Sampling Frequency:	wind speed every 4 secs; pressure every 15 min, sonic every 3600 secs; others: every 30 secs.
Averaging and Output Interval:	every 15 min
Program Name:	cht045v1

1. array I.D.
   o1
2. day
   ok
3. time
   ok
4. mean air temp. @ 2.75 meters (C)
   rclow
5. mean R.H. @ 2.75 meters (%)
   ok
6. mean solar flux coming 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 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 (m/s) @ 3.30 meters
    ok
13. minimum wind speed (m/s) @ 3.30 meters
    ok
14. mean P.A.R. (micromols/s/m2) @ 2.81 meters – Q32567
    before Jan 3, 2006 @ 1700, divide by 200, multiply by 275.48
    after Jan 3, 2006 @ 1700, divide by 200, multiply by 364.68
15. mean soil temperature @ 5 cm in soil (C)
    rclow
16. mean soil temperature @ 10 cm in soil (C)
    rclow
17. surface height (cm) @ 94.0 cm
    height (m) x 100
18. Pressure (mbars)
    ok
19. sample of battery voltage
    o1

notes:
1) No Missing data
2) 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.
3) The datalogger was swapped for a recalibrated CR10X on January 3, 2005.

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.