## Station Contact Information:

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## General Maintenance Check Procedure

1. Open the CR5000 Data Logger Enclosure
2. Check the desiccant bags and moisture sticker for signs of water/moisture entry into data logger enclosure. Replace the desiccant bag if needed.
3. Look at the panel of the data logger, check for loose wire connections by *__lightly__* pulling on the wires connected to the data logger. If loose wires are found, try to determine which instrument they belong to. If comfortable, reconnect wires to data logger (please consult wiring guide, also included in datalogger enclosure). If not comfortable doing this, please contact Dr. Chen or graduate students.
4. Visually inspect the putty seal where the cables enter the bottom of the logger box. If putty is loose, dried, or cracked, then replace. Push the clay to make sure the enclosure is sealed well.
5. Make sure data logger is running a program (Press ESC key from Main Menu) and that the power is on. It will show the program is running.
6. Check data logger for values being immediately reported by station:
    a. Access Public Data Tables from Main Screen by: pressing ENTER -> using the arrow keys to highlight SYSTEM MENU -> press ENTER -> highlight DATA -> press ENTER -> highlight TABLES -> press ENTER -> highlighting PUBLIC -> press ENTER. Return to main menu by pressing ESC multiple times.
    b. Values should be displayed for each variable on the screen, use arrow keys to scroll through values. Check to see if reported values are reasonable (see table of reasonable values, posted on the inside of logger enclosure door). If values are outside of reasonable range, contact Dr. Chen or graduate students.
7. If you have a laptop with the Campbell Scientific Loggernet installed, use Loggernet software to pull data to inspect for problem/realistic values. Note any "NaN" values, steady/out of range values (Example. if HMP45 temperature is reading -40 degrees C, there's a problem with the excitation channel for that sensor).
8. Look at battery voltage reading (batt_volt). Acceptable range is between 11.0V and 12.5V. If lower, there's an issue with the batteries. Contact Dr. Chen or graduate students.
9. Visually inspect the flux tower. Do any instruments look loose or out of place? Tighten any loose bolts if found. If any cables are sagging or have broken cable tie, secure them with a new zip tie.
10. Check power cable for any cuts, weathering. Remove any debris that may have accumulated on the cable. If cable has come out from under any of the gravel bags sitting on top of it, place gravel bags back on top of cable.

11. Carefully inspect the U-bolts attaching the tower base (i.e. pipes) to the tower structure. If loose, tighten. If u-bolts broken or missing, contact Dr. Chen or graduate students ASAP. Check sandbags around tower for tears/weathering. Check guide wires running from top of tower to the base. Should be taught, but not extremely tight. If found to be very loose, tighten by pulling more cable through the cable locks near the end of each base and re-tighten cable locks.
12. Visually inspect battery boxes, which are located near the HVAC units on the lower level of the roof. Clear any accumulated debris or snow from boxes. Check the charger to make sure the batteries are fully charged.
13. Note maintenance visit on the Maintenance Log, also inside the enclosure.
14. Close and reseal the data logger enclosure and secure with zip tie.
15. Send a short summary of your visit, including any problems noted and items needed to Dr. Chen and graduate students.

## Instructions for Replacing Memory Card

The PC Card Status LED is just about the PC card door and is lit when the card is being written to. ***Removing a card while it is active can cause garbled data and may result in damage to the card. Do not switch off the power while cards are present and active.***

**To Remove a Card:**
1. Use keyboard display to go to PC CARD menu
2. Select "STOP CARD"
3. Move the cursor to REMOVE CARD
4. Press ENTER
5. Screen will show "You may now remove the card"
6. Remove card, the card will be reactivated if not removed within a short period of time
7. Insert new card, if needed.

## Table of Reasonable Values

| Sensor | Variable | Unit | R. Range |
|---|---|---|---|
| TE 525-L | rainfall | mm | 0-4 |
| HMP 45C-L | t_hmp | ºC | -30 to 40 |
|  |  |  | No voltage (-40) |
|  | rh_hmp | % | 0.40 - 1.00 |
| LI 190 SB-L | par_flxdens | umol/s/m² | -1 to 2000 |
| SI-111 | TargTempC | ºC | -10° to 65 |
| CSAT3 | Ux | m/s | -0 to 2 |
|  | Uy | m/s | -0 to 2 |
|  | Uz | m/s | -0 to 2 |
| LI7500A | $CO_2$ | mg/m³ | 700 |
|  | $H_2O$ | g/m³ | 8 to 20 |
| Q.7.1 | Rn_Q7_1 | W/m² | -40 to 900 |
| CNR4 | Rad_short_Up | W/m² | 0 to 900 |
|  | Rad_short_Dn | W/m² | 0 to 900 |
|  | Rad_long_Up | W/m² | 0 to 900 |
|  | Rad_long_Dn | W/m² | 0 to 900 |
| Battery | batt_volt | V | 11.0 to 12.6 |