**Clocks and Resetting the Zeno Clock**

Updated 7/6/2016

***Daily Clock Checks:***

There are three sources of time errors in this system. All three must be updated to maintain the Met suite:

(1) The **computer time** drifts and is updated automatically multiple times per day to a network time server through the Clockwise software. This ensures that the computer time is accurate.

(2) The internal clock of the **Zeno** data logger drifts and must be set manually to match the computer time. The Zeno time is displayed in the Intercept Instrument Panel or Summary as “System Time”.

(3) The **Intercept** logging software keeps time based on the computer internal clock frequency, not the computer time as displayed by Clockwise or Windows. The Intercept time is displayed in the Intercept Instrument Panel or Summary as “Last Sample Time (Local)”. As the computer time drifts, Intercept time drifts, but is not corrected until shut down and restarted.

Check the Zeno and Intercept time by doing the following:

1. Check the computer time using RJ Clockwise, which is always running. You can check to see if the scheduled time syncs are working through “Options” –“Tools” – “Read Activity Log.”
2. Watch data update in the Intercept Instrument Panel while also watching Clockwise. Record the offset in the TAWO log on the tech computer.
3. Compare the “System Time” to the “Last Sample Time” in the Intercept Instrument Panel.

When the difference between the computer time and the Zeno time (located in the field named “System time” in Intercept) is greater than 5 seconds, the Zeno data logger time will need to be corrected (see directions below). The time will likely need to be reset once or twice per week. If after setting the Zeno time, the difference between the “System Time” and “Last Sample Time” is greater than 5 seconds, restart Intercept. Note - the one minute data updates based on the System (Zeno) time and will always display the top of the minute (17:13:00 for example).

*To correct the Zeno data logger time through Intercept*:

 \* On Intercept Toolbar, select Utilities 🡪 Terminal Window

\* Choose a time approximately one minute ahead. You will use this time to align the Intercept software with the laptop clock. In the command field, enter the chosen time using the following format: #TMYYMMDDhhmmss

 Where: YY is the year

 MM is the month

 DD is the day

 hh is the hour

 mm in the minute

 ss is the second

\* Next, watch the laptop clock or RJ Clockwise output; five seconds before your pre-set time, hit ‘send’ and ‘ok’.

\* Wait a second or two

**If System Time is within five seconds of “Last Sample Time” there is no need to restart Intercept (will result in ~3 minute loss of data). So only perform the next two steps if the times are way off**.

\* Exit the Intercept program.

\* After another second or two, restart Intercept.

\* Data will begin displaying again in about 3-4 minutes.

**\* Double check that the Intercept time is now aligned with the laptop clock and is on UTC time (not local time).**