How to get and analyze data from Budker sensors with ORIGIN 9.0.
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May 1, 2013

I will provide the necessary software to make the Ascii file and the orgs file to do the data reduction. This assumes that you have an account on all of the HLS data acquisition machines and that you have successfully established a VPN connection to the Sanford lab. Also that you have a way to copy files to your local machine.

1. From HLS folder on DAQ computer copy the three data files to your computer put then where they make sense to you The files names are all two digit Year-month-date format they look like this;
    a. Yr-mth-day.err
    b. Yr-mth-day.hdr
    c. Yr-mth-day.lev
2. Run LGMvisio.exe there should be a shortcut on your desk top. Three windows will open up the first is for loading files, right click on the file you want in blue ellipse then click on the load button red ellipse. In this box you will not see the .lev or .err files.
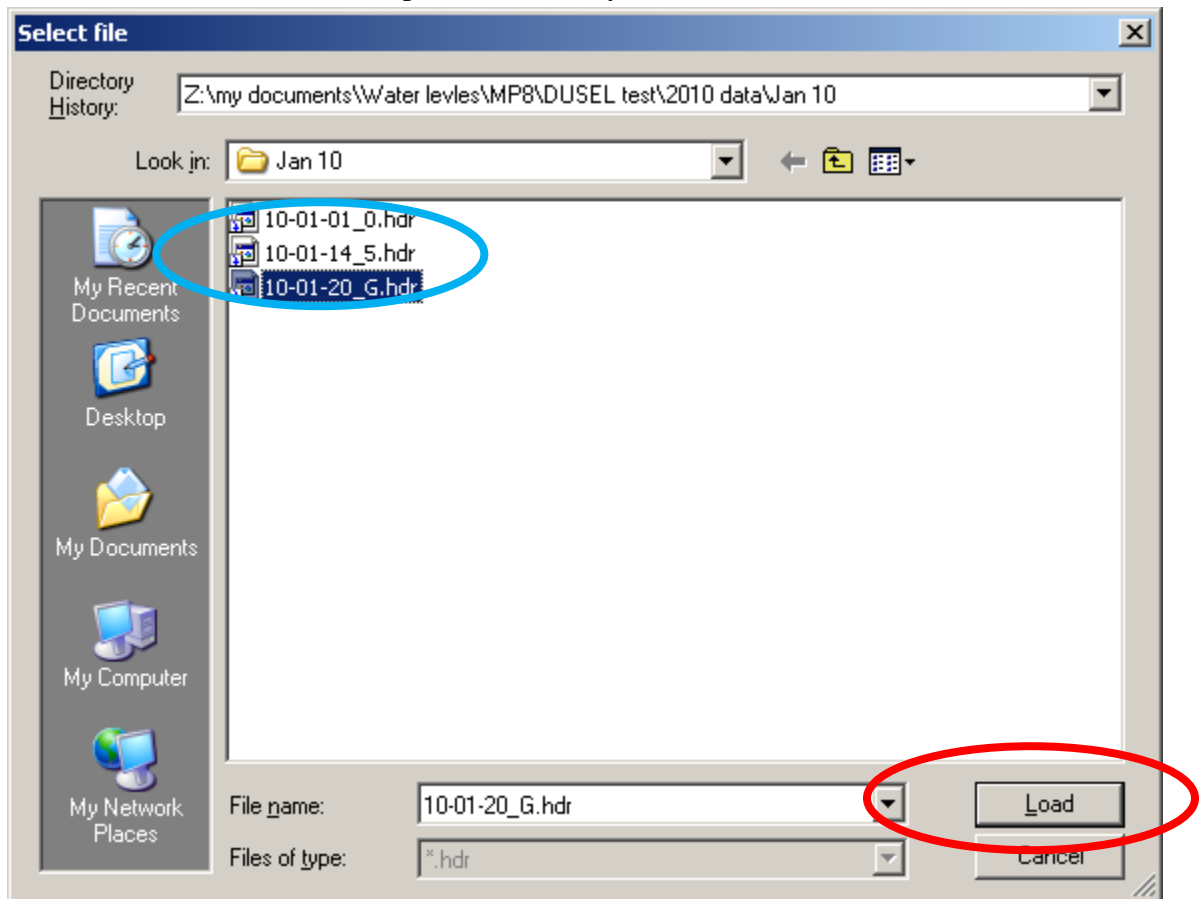
3. The next active screen is the Settings from HDD. Note the start time in blue ellipse you will need that later, also it is in European style of day/month/year.

4. If this is not the right data file click on the green box Select Data Files. The previous dialogue box will open and you can select a new data file, if it is the right file go to the third screen LGMvisio

5. Right click on the ASCII *.dat from file in red ellipse.
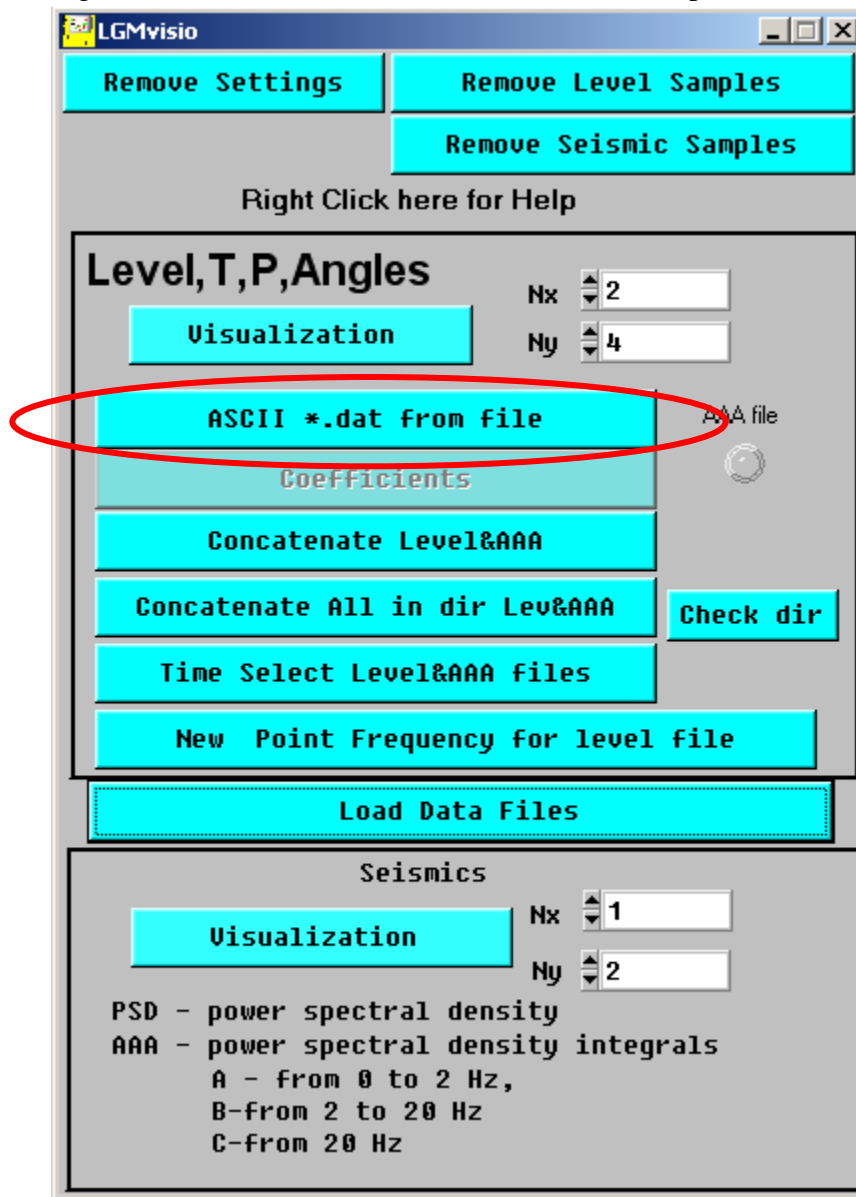
6. Another dialogue box will open called Ascii File Settings, right click the first two boxes Level Data and Temperature Data. If there are pressure sensors on the system click on the third box Pressure Data. Then right click the blue Start Ascii Creation button.
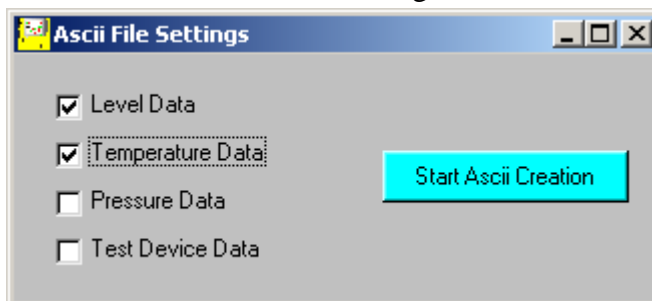
7. Another dialogue box will open called Select file. I name my Ascii files after the month and day they were first started such as Jan 20. They can be called anything that makes sense. If the file exists right click on the name if not go to the File name box and type in whatever you want. This example uses an existing file call Jan 20.dat. Then right click Save.
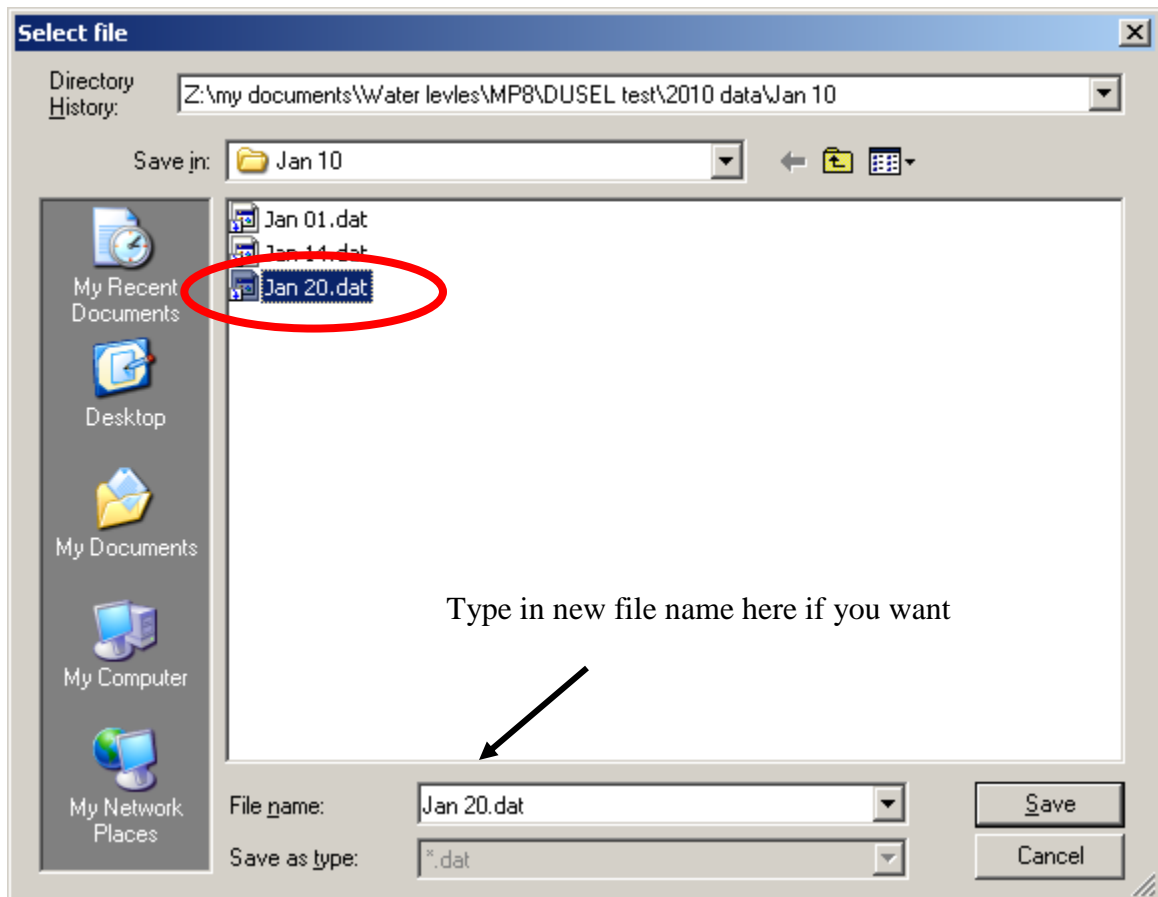
8. If the file already exists a new dialogue box will open asking if you want to replace the existing file. If you click yes the file will be over written if not right click no and create a new file.
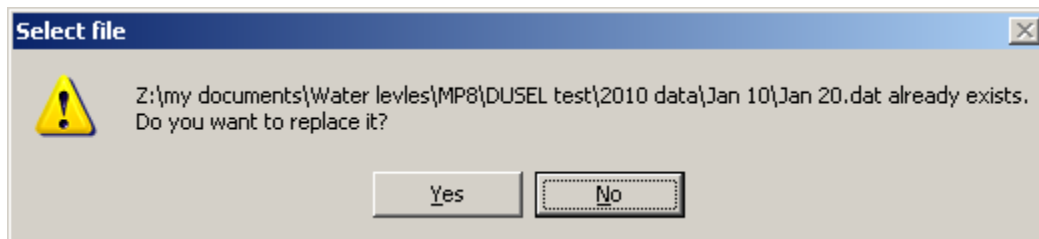
9. For this example I chose Yes a yellow box that says 'Wait, please' will appear. The program is making the Ascii file. When this box goes away you can close all these windows by right clicking the x in the LGM visio box.

10. Next Open Origin go to Import Wizard in the Files tab a screen like this will open

11. Under data source click right hand box and select the .dat file in this case I am using Aurora but any system can be used.
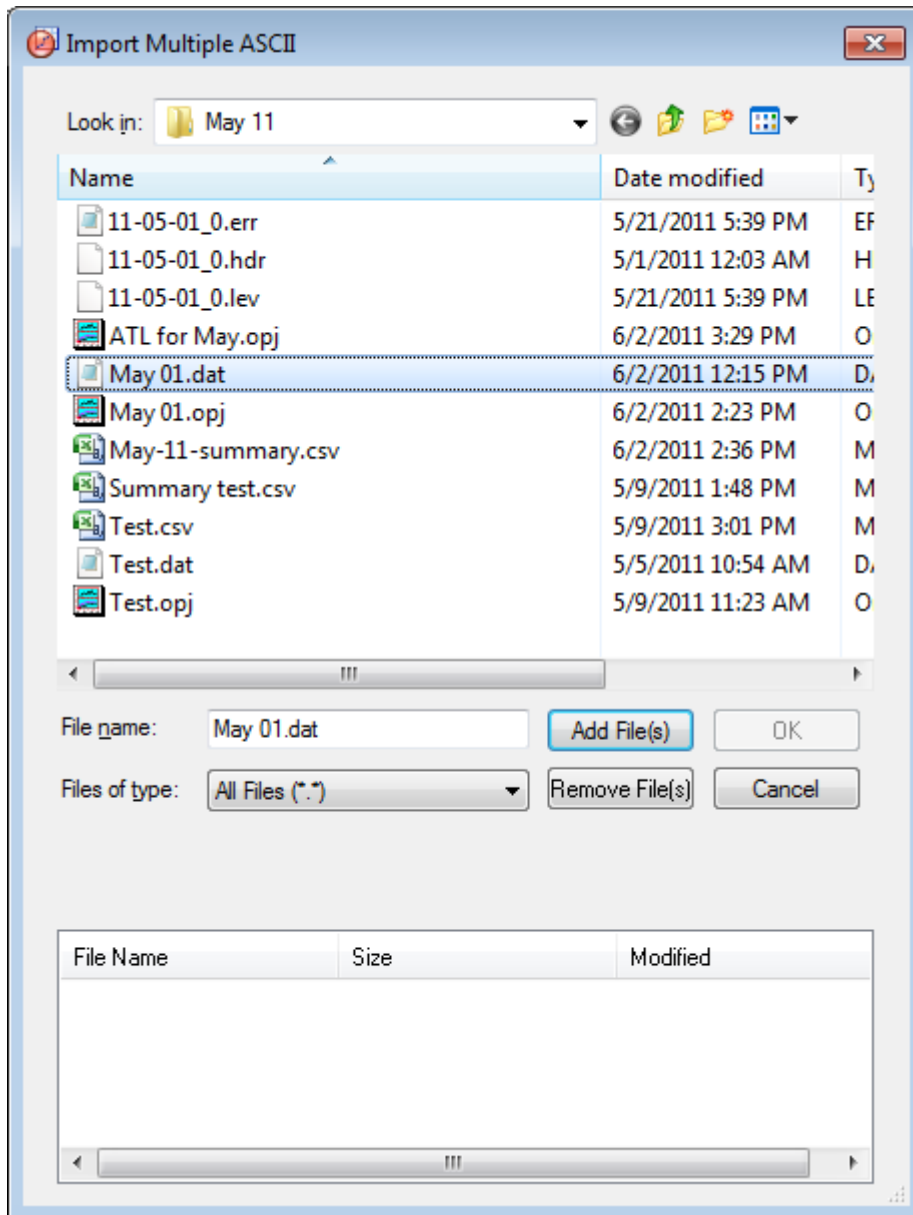
12. Click the Add Files(s) button then OK on the Import Wizard screen then click finish on the Import Wizard, after file is loaded you can expand the Book 1 screen to get;
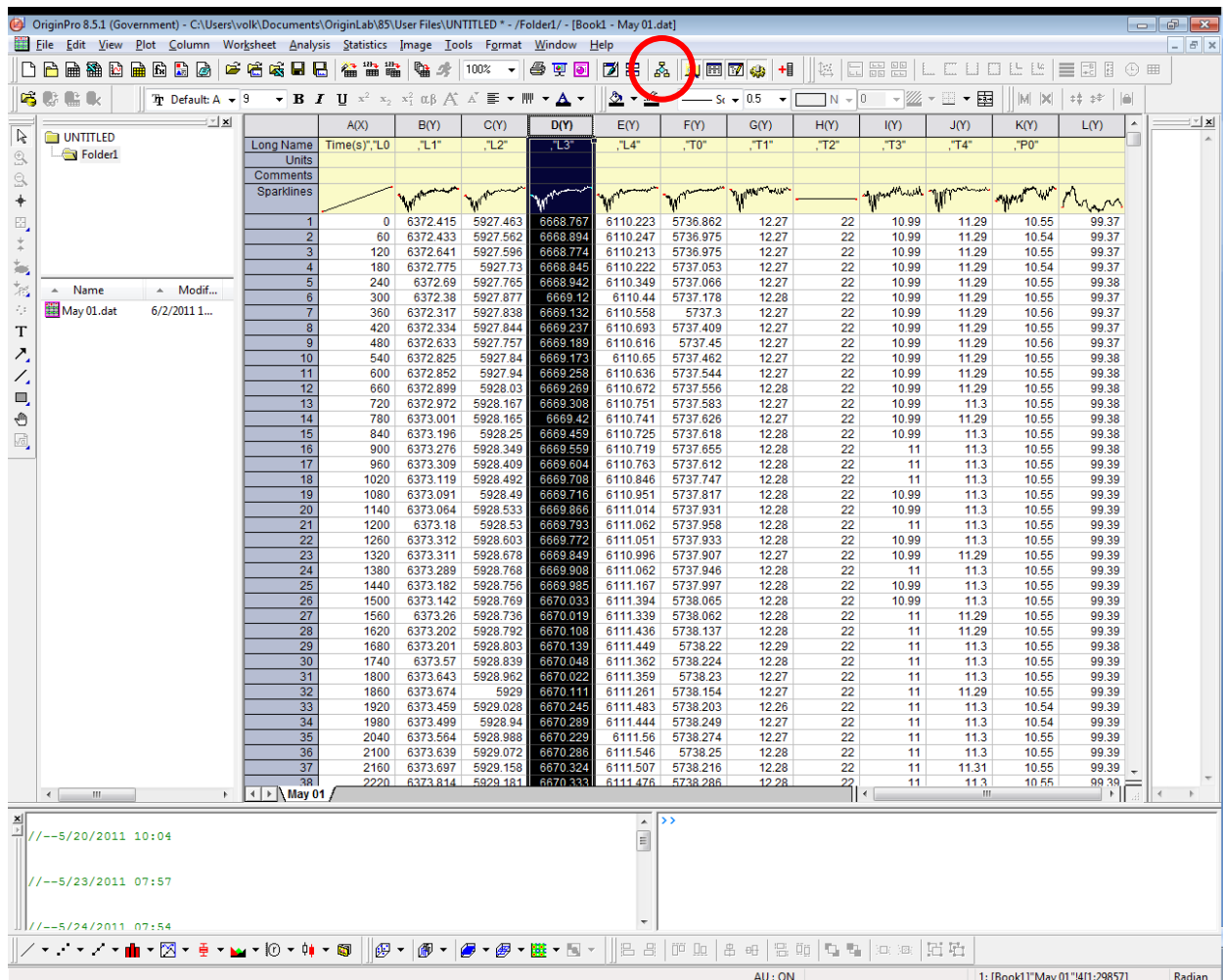
13. I called the plotting program custom.org so that it becomes the default program to run it click on the Flow chart button (red circle).

14. A dialogue box will open asking for the system in this case type in Aurora. (The choices are Aurora, Minos, ArrayC, Array D, MP7, MTSASE, B0, D0, Generic, Hotspares, MP8SASE, NML, Minos2, LaFarge2. All the names can be typed in in lower case or as listed above)
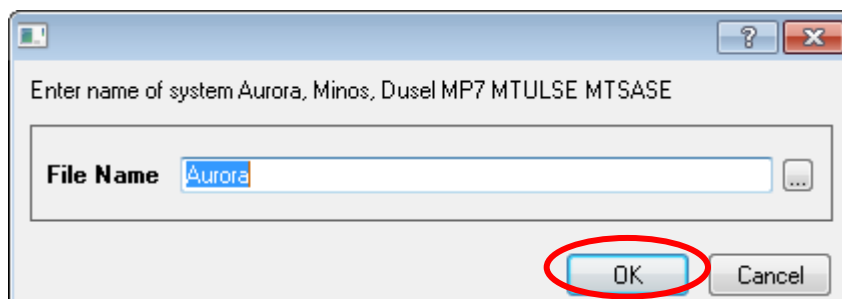
15. Hit the OK and then another dialogue box will open asking for the start date and time these are the values from step 3

16. Put in the starting date and time from step 3 then hit OK things will happen;

17. On the left hand side of the screen new books will open that have the graphs of sensor vs time, sensors differences vs time, the temperature and pressure. The number and type of graphs will vary depending on what system was selected.
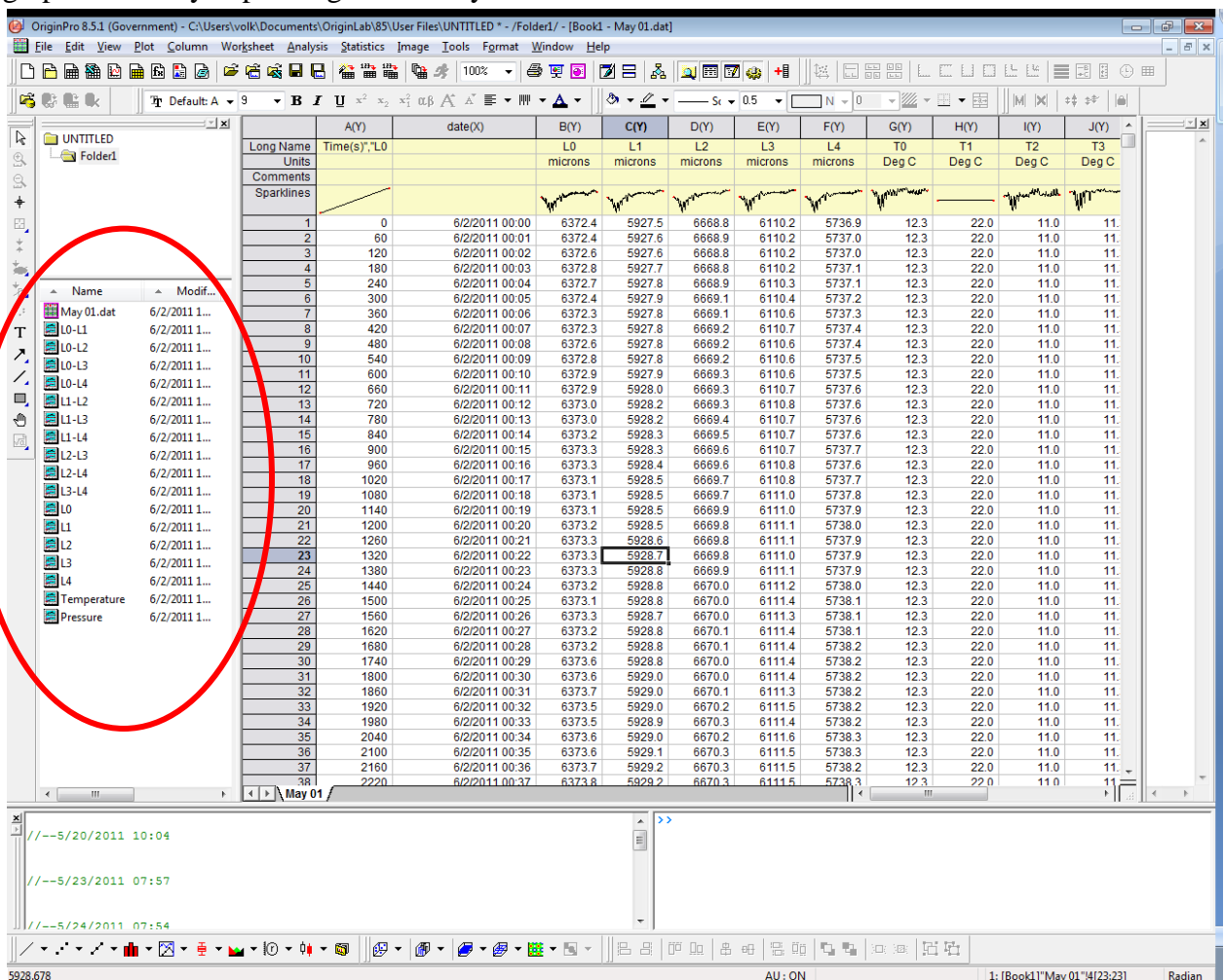
18. Select the graph you want

19. Then under the File tab select Save Project As and give it a name generally it is the Month and date such as May 01. Then close the project.

20. To make csv files for the data base select the main page with the data in it. Or the file tab on the workbook page click on the Open button this example is a project such as May 01.opj
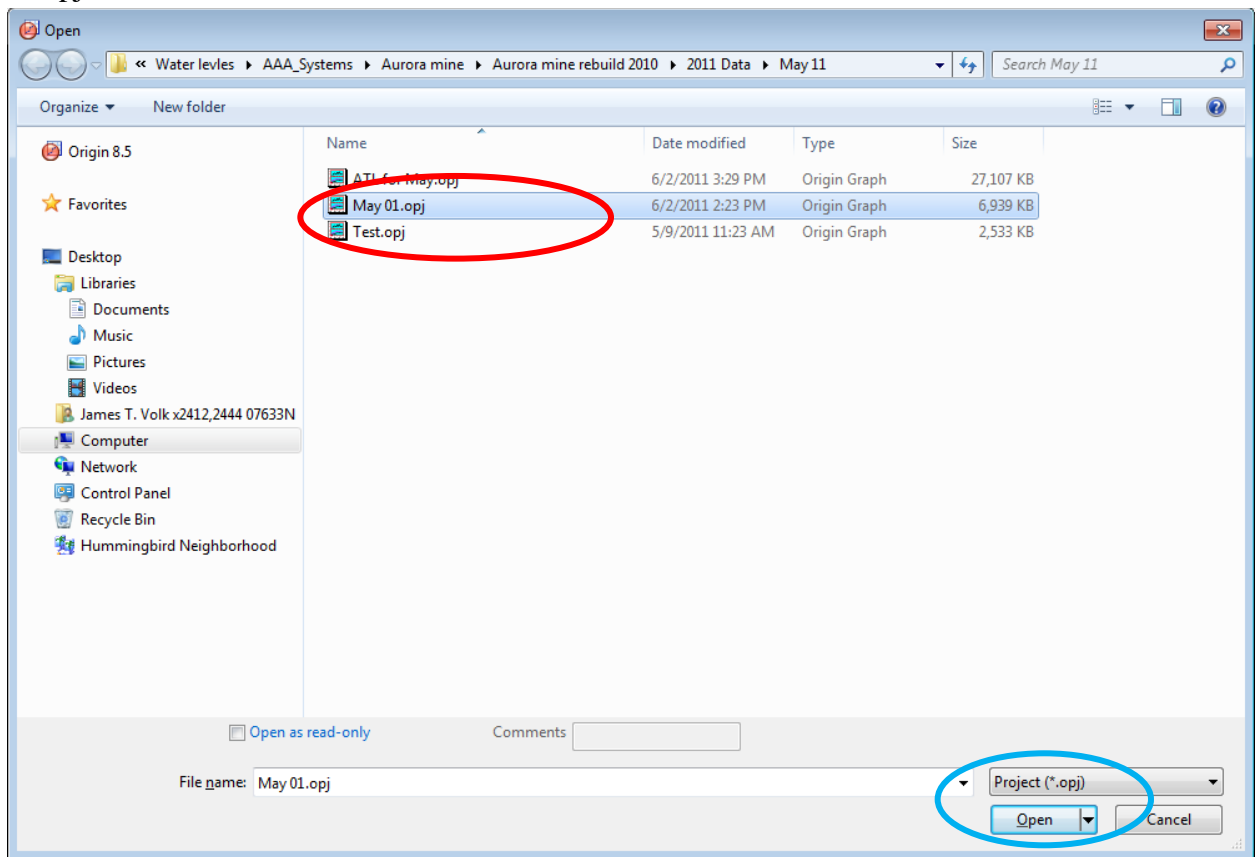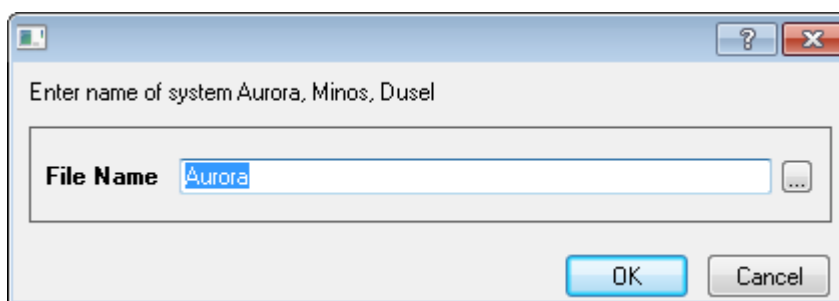

21. Go to Code Builder page the gear in the top ribbon click on the gear and in the Command & Results box type in CSV again a dialogue box will open asking for the system such as Aurora


22. Type in the name of the system and hit OK The file will be rearranged to fit the format for the ILC data base. The names to use are Aurora, Minos, Arrayc, Arrayd, NML, Minos2 and LaFarge2.

23. Another dialogue box will open asking for the file name;
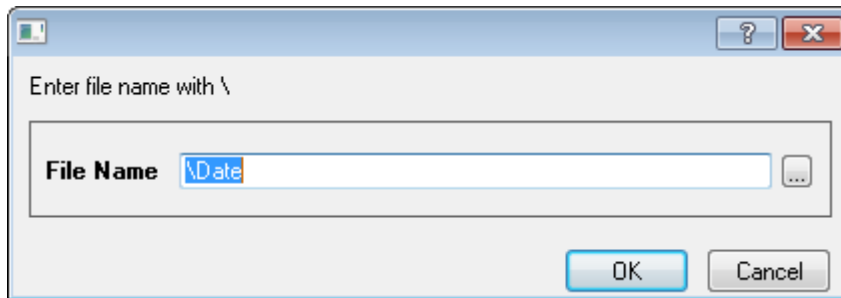
24. It will ask for the file name. I use a convention of MM DD there must be a \ preceding the name. For example something like \May-01 in the box will generate a file called May-01.csv

25. Then a dialogue box will open where you can choose the location of the csv file. I put them in the same location as the data
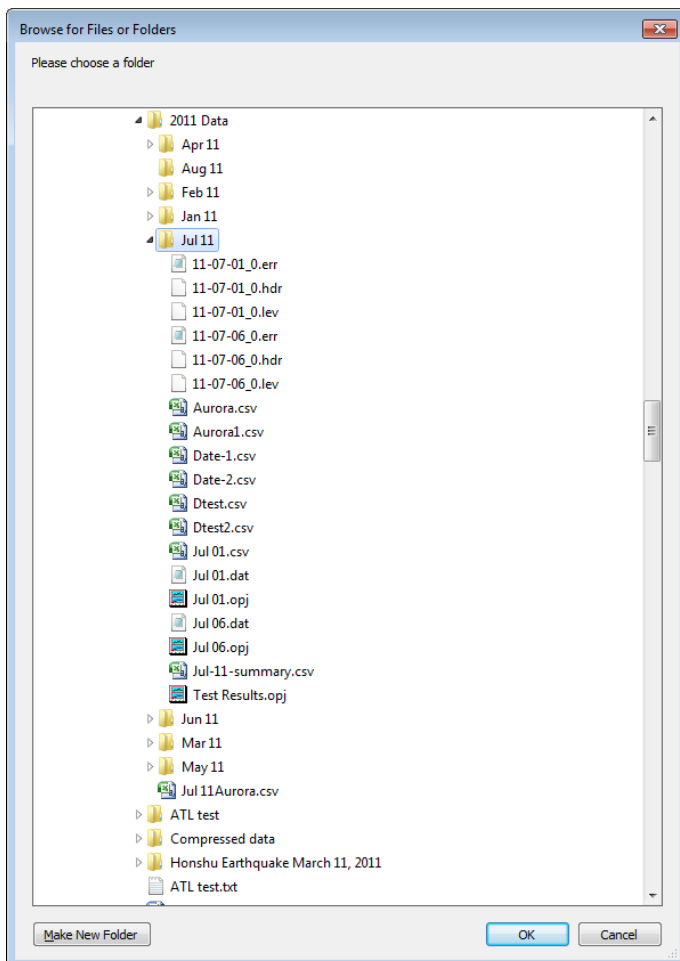
26. Here it is Jul 11 left click the OK at the bottom of the box.
    27. Then another dialogue box will open asking Do you want a header file? Click yes.

Do you want a header line?

Yes　　No　　Cancel
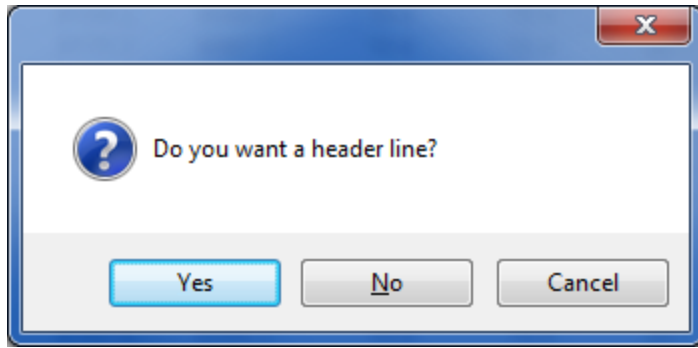
28. Depending on the file length and where it is going it may take some time to write the file
29. This is ready to go to the ILC uses data base.
30. When you close the file it will ask if you want to save the changes answer NO.