



Spectra Offline Processing Version 3.0 Application Guide

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SpectraOfflineProcessing version 3.0 application can process Spectra to Radials, Ellipticals, Waves and/or Image files.

An offline processing license key is required to be plugged into the computer used for running this application. It uses the standard SeaSonde processing tools and requires SeaSonde Release 7 Update 1 or later installed on the computer.

Features:

- Options to process Spectra to different data product outputs like Radials, Ellipticals, Waves, Short-time Radials, Images and other Radial data outputs.
- Can run multiple instances of processing tasks for different data sets simultaneously unlike the Real-time processing where only one data set can be processed at a time.
- Can selectively specify output products for processing and over-ride Radial Configs.
- Creates a log file with relevant messages.
- User has option through UI to add a brief note at the top of the log file.
- Opens log file automatically in Console application for viewing real-time updates to the log file.
- Can place the application in any folder. No specific path required for running.
- However, recommended to keep the application in /Codar/SeaSonde/Apps/RadialTools.
- Use the accompanying "StopSpectraOfflineReprocessing" application to quit any currently active reprocessing tasks.
- Version 3.0 includes a new feature to append first order lines to the processed CSS files.

Steps for Processing:

Double-click SpectraOfflineProcessing" to launch the application. A pop-up window will open as shown in Figure 1.

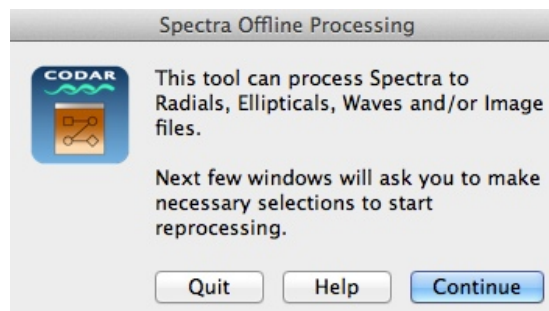


Figure 1: General Info

Help Button launches this Help Guide in “Preview” application.
Continue button goes to the next step. By default it is highlighted, so you can either hit the “Enter” key on your keyboard or click on the button to move forward.
Quit button quits the application.
Clicking Continue button takes you the next window (figure 2) where you can begin processing using default settings for source folder, configs folder and output folder or you can use custom settings for processing.

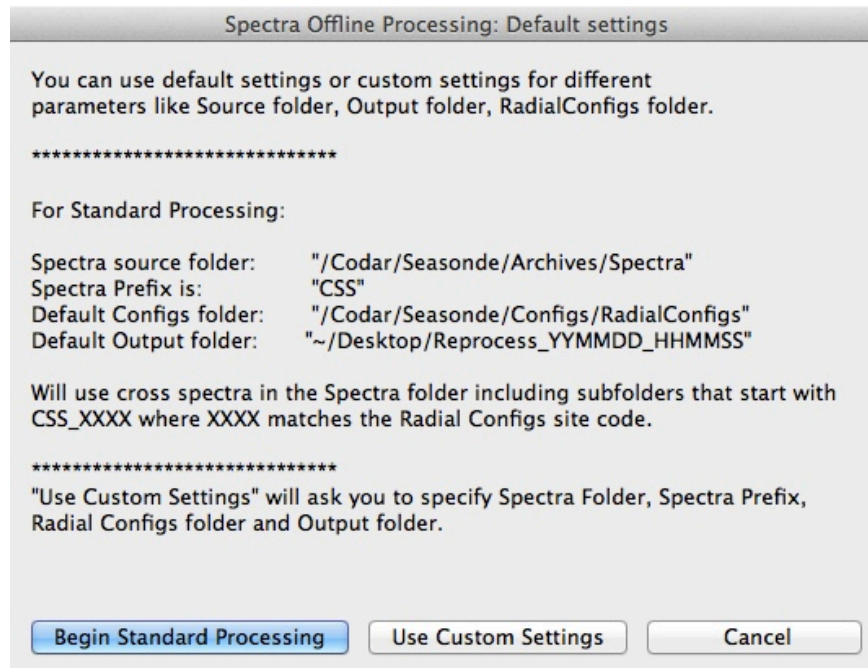


Figure 2: Settings selection

For Standard Processing, the default settings are:

- **Spectra Source folder is:** /Codar/SeaSonde/Archives/Spectra.
This is the folder containing the spectra files to be processed.
- **SpectraPrefix is: CSS** Processes spectra files with names beginning with CSS. You can also process CSR(Reduced cross-spectra)files.By default it processes CSS files only.
- **Configs folder is:** /Codar/SeaSonde/Configs/RadialConfigs
- **Output folder is:** ~/Desktop/Reprocess_YYMMDD_HHMMSS

A typical SeaSonde Radial Site may have daily/weekly/monthly subfolders under the Archives/Spectra folder.

By default the script will process all the CSS_XXXX files from all the sub-folders in the Spectra Source folder where XXXX matches the Radial Configs 4-letter site code.

Click on “Begin Standard Processing” button to start processing using the default settings. Alternatively, you can specify different Source, RadialConfigs and Output folders and SpectraPrefix.

If you click on “Begin Standard Processing” button, the next window will ask you to enter any short notes, you may want to enter about this processing task. (figure 3)

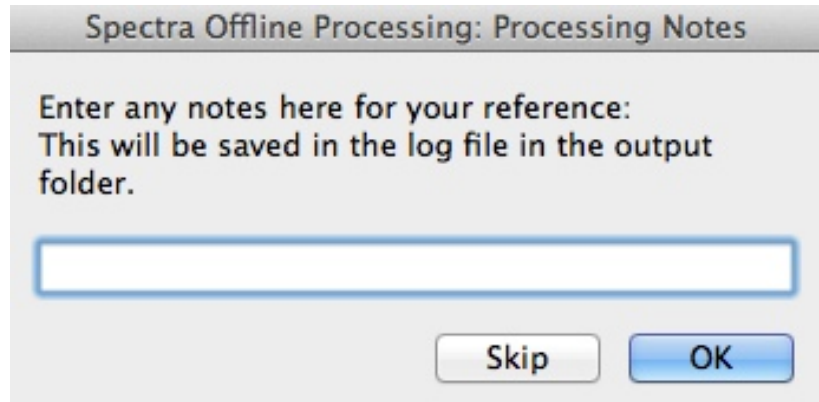
A screenshot of a software dialog box titled "Spectra Offline Processing: Processing Notes". The dialog has a light gray background. At the top, the title is in a darker gray bar. Below the title, the text "Enter any notes here for your reference: This will be saved in the log file in the output folder." is displayed. Below this text is a large, empty rectangular text input field with a blue border. At the bottom right of the dialog are two buttons: "Skip" and "OK".

Figure 3: Processing Notes

Enter any brief notes in this box as shown in figure 4. These notes will be appended to the beginning of the log file in output folder as shown in figure 7.

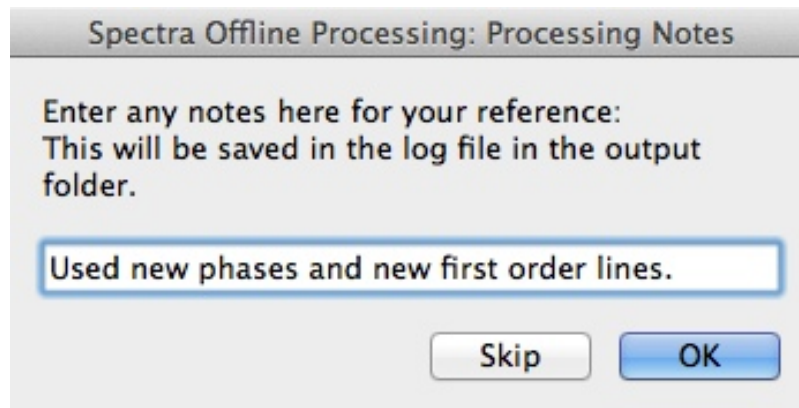
A screenshot of the same "Spectra Offline Processing: Processing Notes" dialog box. The text input field now contains the text "Used new phases and new first order lines." in a blue font. The "Skip" and "OK" buttons are still present at the bottom right.

Figure 4: Enter processing notes

If you want to enter notes on separate lines instead of on a single line, then type “\n” between your desired lines and the text will be split onto different lines, as shown in figure 5.

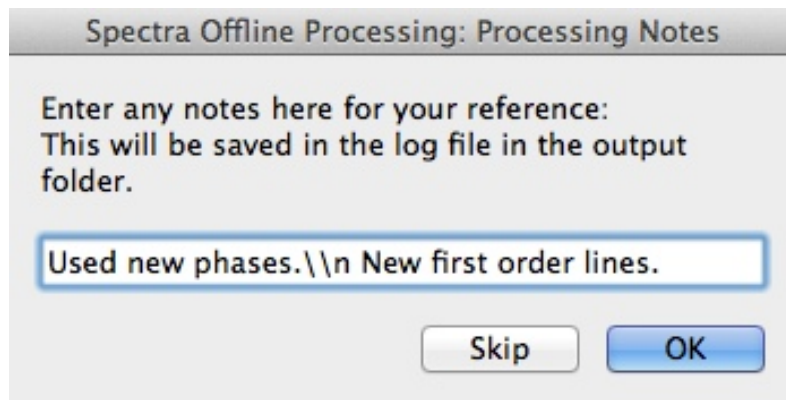
A screenshot of the "Spectra Offline Processing: Processing Notes" dialog box. The text input field now contains the text "Used new phases.\n New first order lines." in a blue font, where "\n" represents a line break. The "Skip" and "OK" buttons are still present at the bottom right.

Figure 5: Split notes into different lines

You can also skip this note taking step using Skip button.
Clicking on Skip or OK button will open the last dialog window showing you the path to your output/destination folder

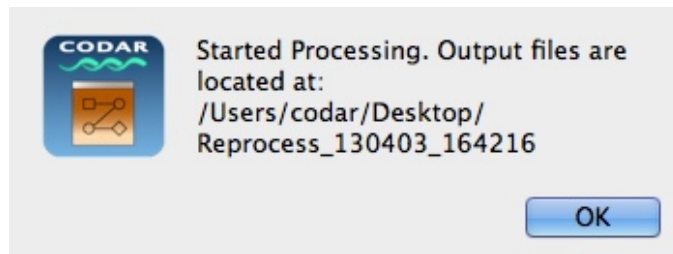


Figure 6: Path to the output folder.

The output files are stored in Reprocess_YYMMDD_HHMMSS folder in the output folder you selected. Clicking on OK button will open the log file in a new Console window and the log updates will be visible in real-time on this window.(figure 7)

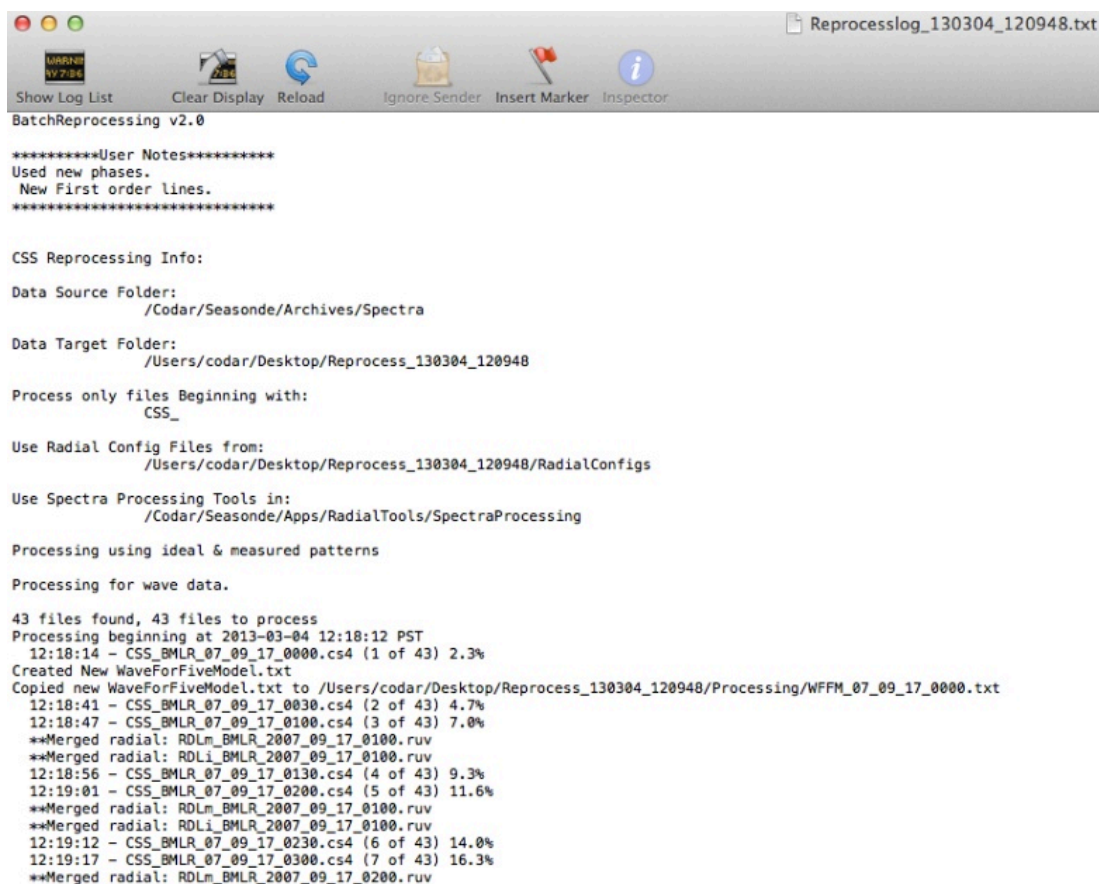


Figure 7: Log file opened in Console window. User notes appended at the top of this log file.

Now, instead of Standard Processing using default settings, you can use custom settings.

Click on “Use Custom Settings” button. This takes you to the Choose a Folder dialog to select the spectra source folder containing the spectra you want to process.

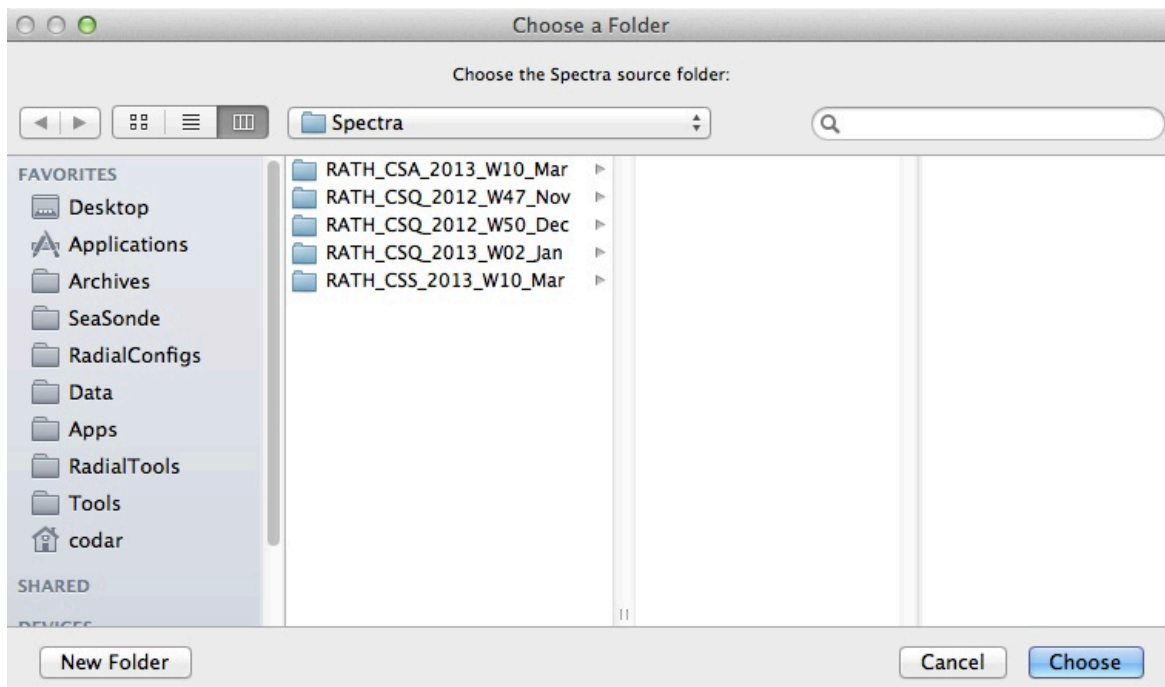


Figure 8: Choose Spectra source folder.

You can select the exact sub folder containing the spectra files or a parent folder containing several sub-folders with spectra files for your site as shown above.. The tool will process all spectra files from all sub-folders, matching with the four letter site code in RadialConfigs folder.

After selecting the Choose button, next step will ask you to specify the filename filter for the spectra files to process.(figure 9).By default, it will process all files starting with CSS_ name. You can also specify other spectra type like CSR.(Reduced cross-spectra).

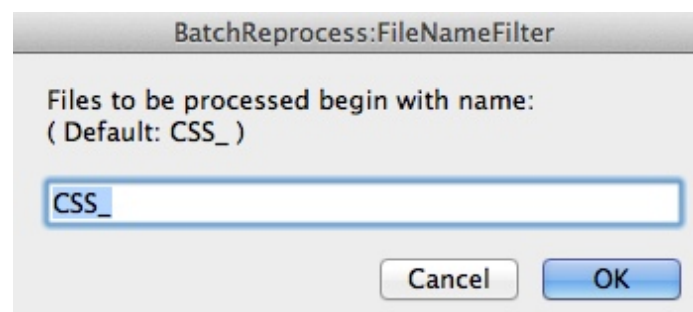


Figure 9: Filename filter

So, for example: By default all CSS_XXXX files in all sub-folders inside the spectra source folder, you chose in previous step will be used for processing.(XXXX = four letter site code in the Radial Configs folder).

Next, you can choose to append first order lines to the spectra files. This is a new feature starting from version 3.0. There are three possible options:

Leave As-Is: Will leave the spectra in source folder untouched with no modified first order lines.

Determined first order at source: Will keep spectra in source folder, but will replace the determined first order lines with the new set resulting from this processing.

Duplicate: (Default and recommended option): Will copy spectra from source folder to destination folder with determined first order lines. Source spectra will be untouched.

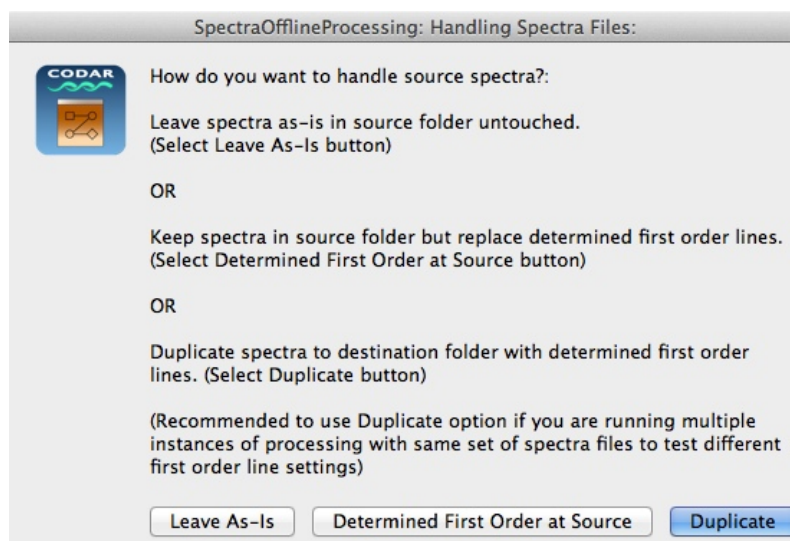


Figure 10: Handling spectra files with first order lines

Next, you will be prompted to choose the RadialConfigs folder to use for processing.

Click on OK button to move to next step, where you are prompted to use configs as is or selectively specify output products and over-ride the settings in the RadialConfigs folder.



Figure 11: Specify Output Products

Most of the times, you want to use configs as is, the default choice as shown above.

But this is useful, for example, if you are trying to reprocess different sets of data simultaneously using same RadialConfigs folder, but want to process only Radials for one set and only Waves for another set.

In that case, instead of modifying RadialConfigs manually for each set of processing, you can specify output products selectively through UI.

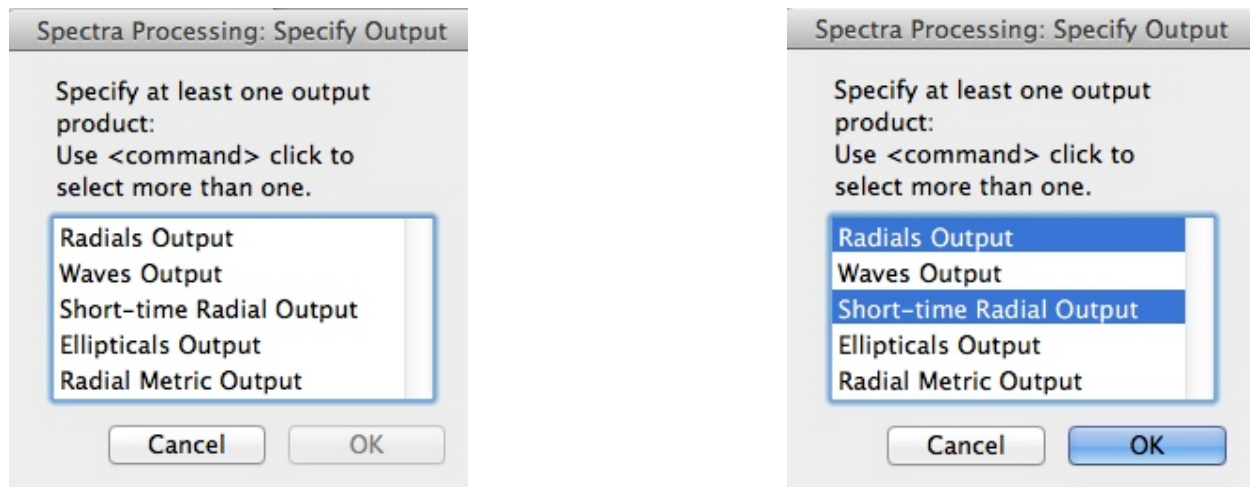


Figure 12: Specify Output Products

You can press “Command” (⌘) key and click to select more than one outputs. Click OK when done.

Next dialog prompt will ask you to choose the output folder location (figure 13) where the processed results will be saved along with the RadialConfigs folder, Processing folder and log file.

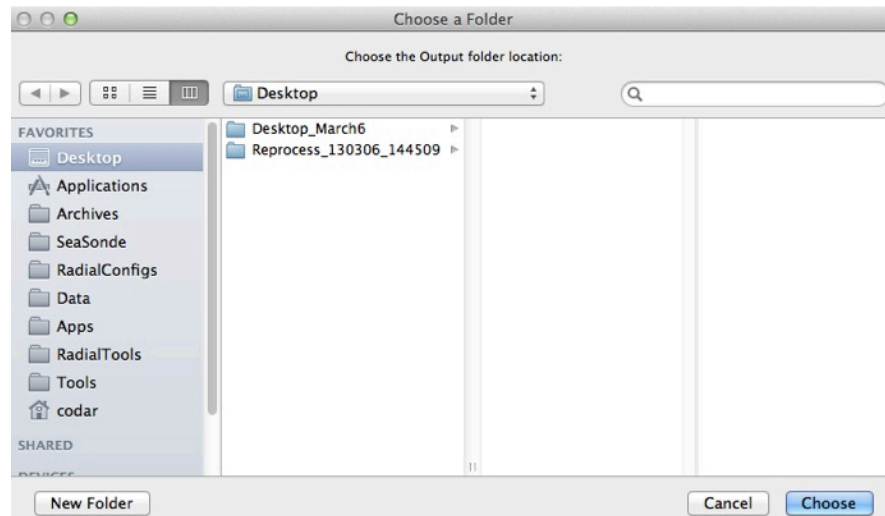


Figure 13: Choose Output folder location

After selecting Output folder location, you can specify the start and stop date/times for processing spectra files. (figures 14 and 15)

The figure shows two instances of the 'Spectra Offline Processing: Start Date/Time' dialog box. Both boxes have a title bar with the same text. The main text inside each box reads: 'Process files created starting from this date: Enter in this format ONLY: YYYY/MM/DD HH:MM Example:2013/01/01 01:10'. Below this is a note: '(Note: Leave the box empty for processing all files)'. At the bottom are 'Cancel' and 'OK' buttons. In the left instance, the text input field is empty. In the right instance, the text input field contains '2013/01/01 10:10'.

Figure 14: Start Date/Time

Leave the box blank to process all the spectra files in the source folder or enter the before date/time to start processing. Enter in the exact format as shown above in the dialog.

This means that in the above example, all the spectra files with time stamps at or before the date/time specified, will be processed. Next, specify the before date/time. (figure 15)

The figure shows two instances of the 'Spectra Offline Processing: Before Date/Time' dialog box. Both boxes have a title bar with the same text. The main text inside each box reads: 'Process files created before this date: Enter in this format ONLY: YYYY/MM/DD HH:MM Example:2013/01/10 10:10'. Below this is a note: '(Note: Leave the box empty for processing all files)'. At the bottom are 'Cancel' and 'OK' buttons. In the left instance, the text input field is empty. In the right instance, the text input field contains '2013/01/10 23:00'.

Figure 15: Before Date/Time

Leave the box blank to process all the spectra files in the source folder or enter the before date/time to start processing. Enter in the exact format as shown above in the dialog. This means that in the above example, all the spectra files with time stamps at or before the date/time specified, will be processed.

So, if you specify both start time and before time, then all spectra files between those time stamps will be processed.

Click on OK and it will take you to the next optional step of entering any brief notes as previously mentioned in figures 3-5. Note taking step is optional and you can skip it.

The last dialog window will display the path to the output folder.

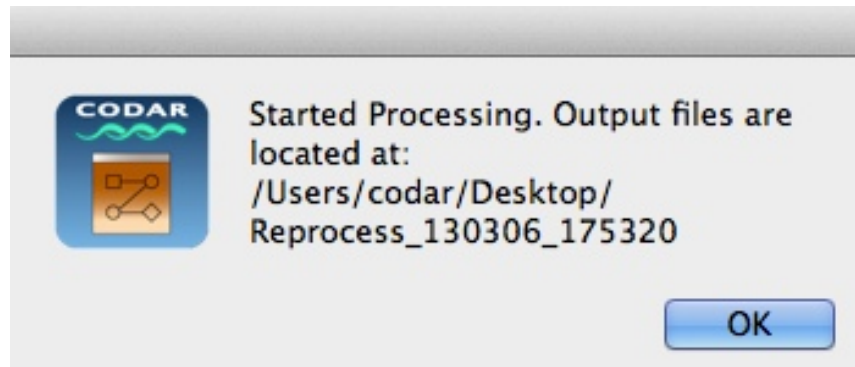


Figure 16: Started Processing Dialog.

The output files are stored in Reprocess_YYMMDD_HHMMSS folder in the output folder you selected.

Selecting the OK button will open the log file in a new Console window and the log updates will be visible in real-time on this window.(as in figure 7 above).

The output folder has all final output products, diagnostics, processing folder and a Reprocesslog_YYMMDD_HHMMSS.txt log file.(figure 17) This log file contains all the relevant processing info and is intended for the user.

There is an additional log file Debuglog_YYMMDD_HHMMSS.txt which is mainly for debugging, mostly used by the developer of this application and can be referred to in case of any processing issue.

Also, the Reprocesslog... file is color coded. It is marked green, if no user error was detected before processing started.

Also, when processing is complete 100%, a new file “_ProcessingComplete.txt” is added to the top of the folder contents. So user can just peek into the output folder to check whether processing is complete or not without opening log file.

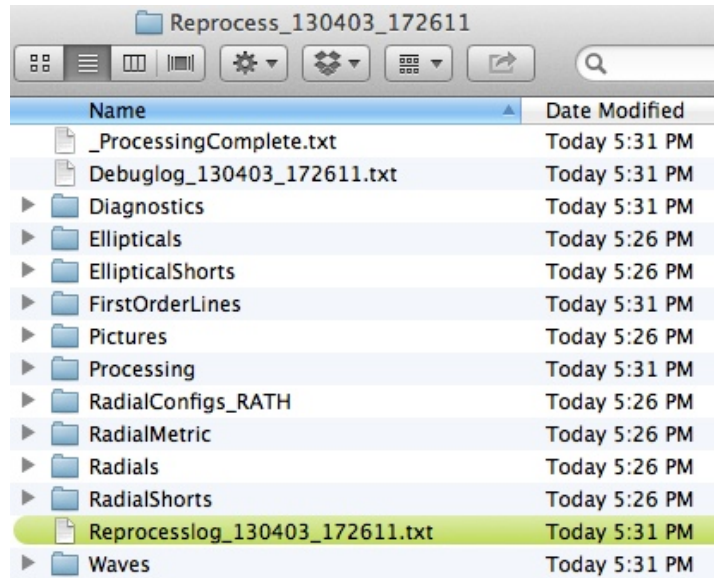


Figure 17: Contents in the output folder.

If there is some error that prevents the execution of the processing script the Reprocesslog... file will be color coded in red.

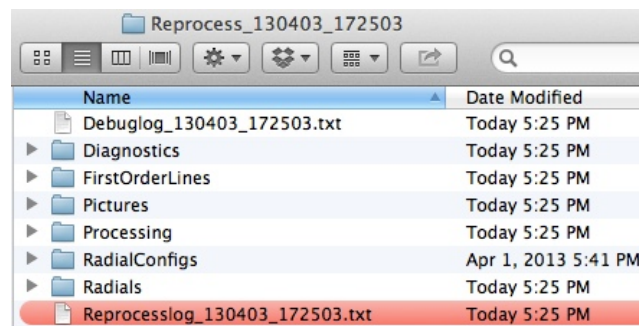


Figure 18: Log file marked red indicating some error.

Stopping Spectra Offline Reprocessing



Once, you have started reprocessing using “SpectraOfflineProcessing” application, if you want to stop processing, you have to use another application called “StopSpectraOfflineProcessing”.

Double click to launch the application. It will open up a welcome window with general information about the application.



Figure 19

Select “Run” button to proceed.

If there are no active Reprocessing tasks, you will see the dialog as in figure 20.

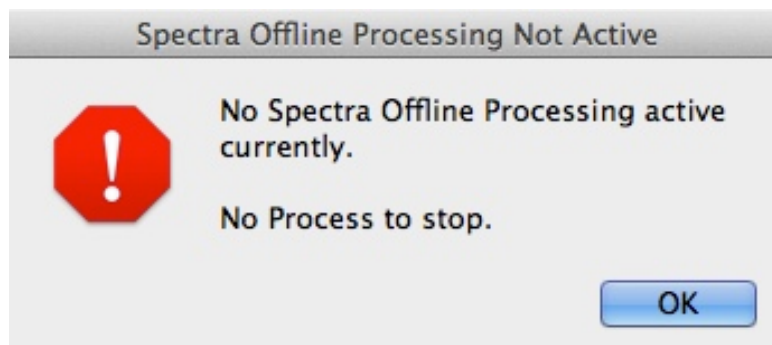


Figure 20: No processes active.

If there are any active Reprocessing tasks, you will see dialog as in figure 21.

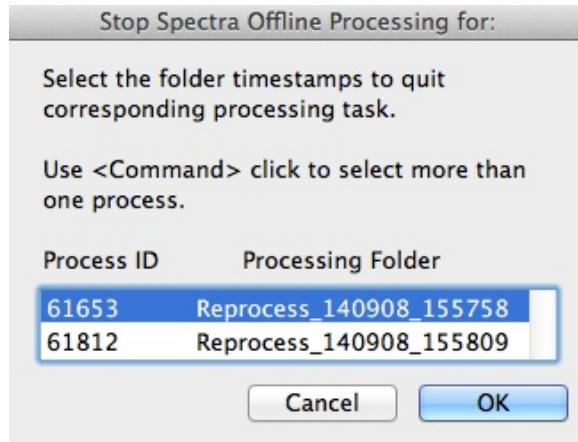


Figure 21: Select the Spectra Offline Processing tasks to quit.

If there are more than 1 processes active, a list of the processes will be displayed. Process ID and the corresponding processing folder timestamp in your output folder are displayed. So, select the folder timestamp to quit the corresponding offline processing.

You can press “Command” (⌘) key and click to select more than one process to quit.

Click OK and if processing stopped successfully, a dialog will be displayed as in figure 22.

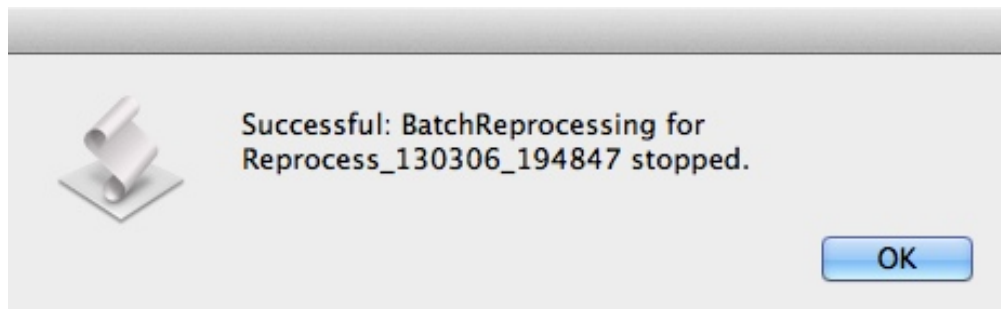


Figure 22: Spectra Offline Processing stopped Successfully.

Troubleshooting

This section describes some of the most common problems expected to appear and possible solution for them.

- When you launch the SpectraOfflineProcessing, it checks to see if the SeaSonde License key is connected to the computer. If it is not connected, you will see an error message as in figure 23.

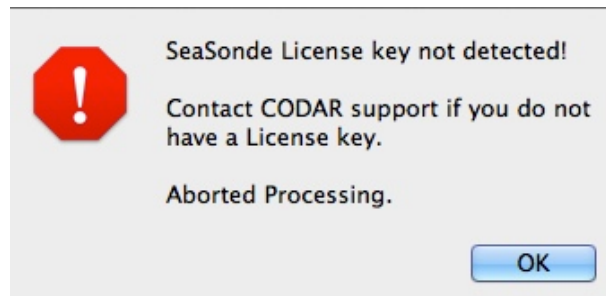


Figure 23: License Key not detected

- Also, Release 7 update 1(R7U1) is required for this SpectraOfflineProcessing app to work. It will not work with R7 or previous version of SeaSonde tools. If R7U1 is not installed, then SpectraOfflineProcessing may still run but will not produce any output products like radials, waves, etc.
- The log file (Reprocesslog_YYMMDD_HHMMSS.txt) located inside the Output folder is a good source to look for any hints of possible error messages. (figure 24)
- Similarly, if license key is not detected once the processing starts, error messaged will be logged in the log file and processing will be aborted. (figure 25)

Figure 24 on the next page shows an example where 10 CSS files were found but no CSS files matching the four letter site code(in this case "RATH") were found and hence processing stopped.

- If the key is plugged in and if still you get error message, then try a different usb port and/or restart computer and try again.
- If still same error then make sure BillsScripting.app is located in /Library/ScriptingAdditions folder. If it is missing, run InstallBillsScripting.pkg from /Codar/SeaSonde/Installations folder.


```

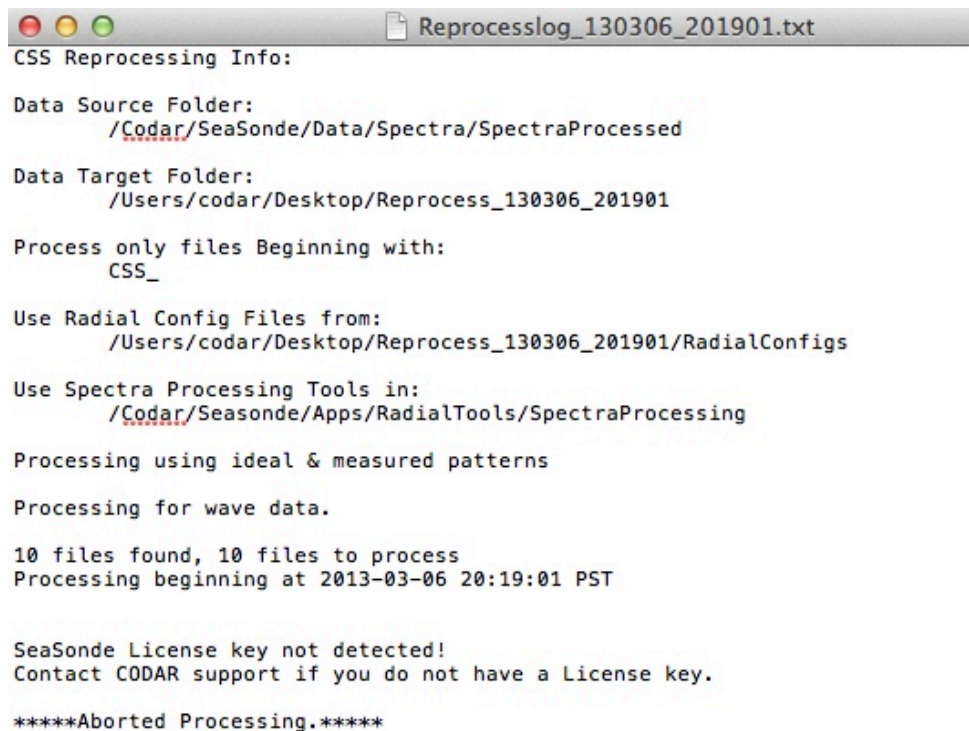
BatchReprocessing v2.0

*****User Notes*****
*****

CSS Reprocessing Info:
Data Source Folder:
    /Codar/SeaSonde/Archives/Spectra/
Data Target Folder:
    /Users/codar/Desktop/Reprocess_130306_155236
Process only files Beginning with:
    CSS_
Process only files time stamped at or after:
    2013/01/01 01:10
Process only files time stamped at or before:
    2013/01/10 10:10
Use Radial Config Files from:
    /Users/codar/Desktop/Reprocess_130306_155236/RadialConfigs
Use Spectra Processing Tools in:
    /Codar/Seasonde/Apps/RadialTools/SpectraProcessing
Processing using ideal & measured patterns
Processing for wave data.
10 files found, 0 files to process
Sorry, no CSS_ files for RATH site code found to process.

```

Figure 24: Error message in log file.



```

Reprocesslog_130306_201901.txt

CSS Reprocessing Info:
Data Source Folder:
    /Codar/SeaSonde/Data/Spectra/SpectraProcessed
Data Target Folder:
    /Users/codar/Desktop/Reprocess_130306_201901
Process only files Beginning with:
    CSS_
Use Radial Config Files from:
    /Users/codar/Desktop/Reprocess_130306_201901/RadialConfigs
Use Spectra Processing Tools in:
    /Codar/Seasonde/Apps/RadialTools/SpectraProcessing
Processing using ideal & measured patterns
Processing for wave data.
10 files found, 10 files to process
Processing beginning at 2013-03-06 20:19:01 PST

SeaSonde License key not detected!
Contact CODAR support if you do not have a License key.

*****Aborted Processing.*****

```

Figure 25: Key not detected message in the log file.

- A summary of data outputs enabled for processing is generally logged in the log file as in Figure 26. If you specified output products through the user interface as in Figure 11 above, then settings from Radial Configs will not be used and this will be noted in the log file also as in Figure 26.

```

BatchReprocessing v2.0
*****User Notes*****
*****

CSS Reprocessing Info:
Data Source Folder:
    /Codar/SeaSonde/Archives/Spectra/
Data Target Folder:
    /Users/codar/Desktop/Reprocess_130310_154332
Process only files Beginning with:
    CSS_
Use Radial Config Files from:
    /Users/codar/Desktop/Reprocess_130310_154332/RadialConfigs
Use Spectra Processing Tools in:
    /Codar/SeaSonde/Apps/RadialTools/SpectraProcessing

Using GUI selection for Enabling/Disabling Radial/Waves/Elliptical/Short-time Radials or Ellipticals/Radial Metric Output instead of settings in RadialConfigs folder.

Radials:    On
Waves:      Off
Ellipticals: Off
Radial Metric: Off
Short time Radial/Elliptical: Off

Processing using ideal & measured patterns

10 files found, 10 files to process
Processing beginning at 2013-03-10 15:47:25 PDT
15:47:27 - CSS_RATH_13_03_06_1910.cs4 (1 of 10) 10.0%
15:47:34 - CSS_RATH_13_03_06_1920.cs4 (2 of 10) 20.0%
15:47:41 - CSS_RATH_13_03_06_1930.cs4 (3 of 10) 30.0%
**Merged Radial: RDLm_RATH_2013_03_06_1900.ruv
**Merged Radial: RDLi_RATH_2013_03_06_1900.ruv
15:47:49 - CSS_RATH_13_03_06_1940.cs4 (4 of 10) 40.0%
15:47:56 - CSS_RATH_13_03_06_1950.cs4 (5 of 10) 50.0%
15:48:03 - CSS_RATH_13_03_06_2000.cs4 (6 of 10) 60.0%
15:48:10 - CSS_RATH_13_03_06_2010.cs4 (7 of 10) 70.0%
15:48:17 - CSS_RATH_13_03_06_2020.cs4 (8 of 10) 80.0%
15:48:24 - CSS_RATH_13_03_06_2030.cs4 (9 of 10) 90.0%
**Merged Radial: RDLm_RATH_2013_03_06_2000.ruv
**Merged Radial: RDLi_RATH_2013_03_06_2000.ruv
15:48:33 - CSS_RATH_13_03_06_2040.cs4 (10 of 10) 100.0%

Processing completed at 2013-03-10 15:48:38 PDT
1.2 minutes total processing time

```

Figure 26: Log file shows a summary of data products which are enabled/disabled and if data products were specified from the GUI

- Also, if there is any space in any of the folder names, then processing will not work and this tool will give you an error message.
- If there are any other issues and if you need help, contact CODAR support with the following info:
 - Zipped SpectraOfflineProcessing application.
 - Your entire Reprocess_YYMMDD_HHMMSS output folder in zipped form or at-least the Reprocesslog_YYMMDD_HHMMSS.txt log file and Debuglog_YYMMDD_HHMMSS.txt log file and the Processing folder in zipped form.
- Also, when transferring this app from one computer to another or sharing by email or any other medium, make sure that the app is zipped else necessary components may be missing and cause errors in execution.