Standard Operating Procedure for Adding a New Long Range (5 MHz) HF Radar Site to the MidAtlantic Regional Coastal Ocean Observing System (MARCOOS)

These are the steps to be followed when configuring a new Codar-type High Frequency radar system. Once these steps are followed the radial data can be ingested into the radar network

The first application to run is SeaSondeRadialSetup.
1. Provide a unique four alphanumeric site code.
2. Input the latitude and longitude of the receive antenna.
3. Set the time zone as GMT or UTC.
4. Enable radial processing
5. Use range cells 1 to 40 for radial processing
6. Set the minimum number of vectors per radial map to 2
7. Set the radial coverage to 180 minutes and the radial output to 60 minutes. This sets the first 2 parameters on Line 21 of the header.
8. Check the box for ideal antenna pattern
9. Input the true bearing for Loop1 of the Receive antenna. This can be accomplished by taking the magnetic bearing of the arrow on the underside of the receive antenna and using the program MagneticDeclination to calculate the bearing of Loop1.
10. Set the angular resolution to 5 degrees
11. Set the antenna phases to those measured from the sea echo. This is done by using the median value of the antenna phases as displayed in the application DiagDisplay.

Then there are a few settings to change from the default values.

Change the second parameter on line 15 of the header.txt to 5.

CSPro_Preferences
Set line 14 to 1 40 as the first and last range cell to be processed.
Set line 16 to 60 as the averaging period in minutes for cross spectra collection.
Set line 17 to 30 as the output period in minutes for cross spectra output.

SeaSondeAcquisistion.plist
Reduce the number of range cells the site saves to 40. This is found in the Sar Processing/RangeCells entry.

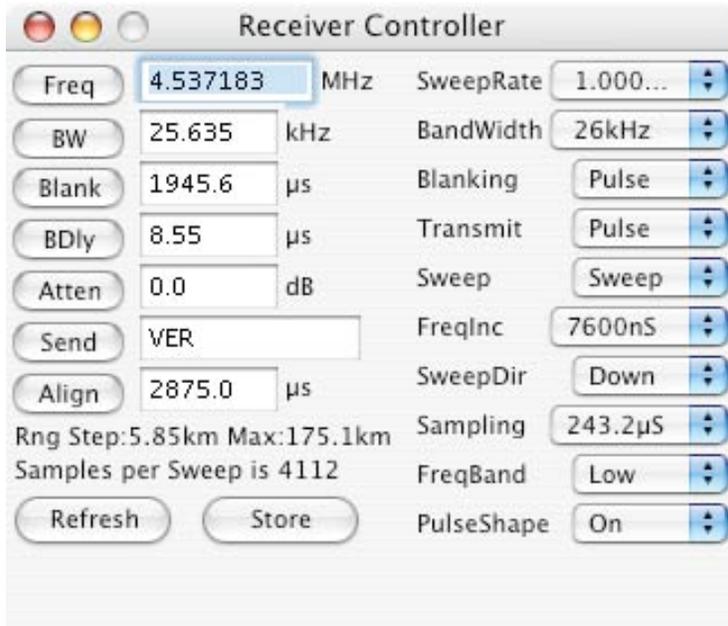Verify the settings for SeaSonde Controller.

Figure 1: SeaSondeController Settings for 5 MHz System

Make sure Archivalist is working properly so it is saving the data that the user would like to keep as well as not allowing files to build up to large numbers in any particular folder.

Check for bistatic contamination from other sites that can contaminate radial processing. If the radar is operating at the same frequency of other radars in the area, the possibility exists that the signal from another radar is being interpreted by the computer as backscatter from it's own radar. This would lead to large currents and errors in your measurements. The alignment number will need to be changed to fix this if the situation arises.
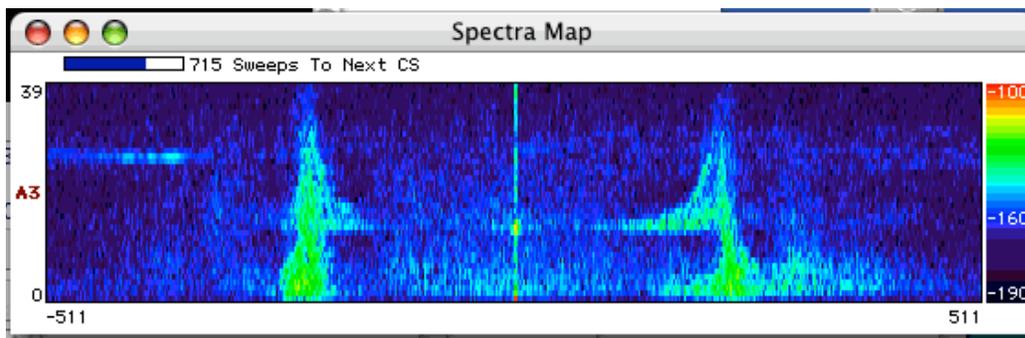

Figure 2: Example of bistatic contamination