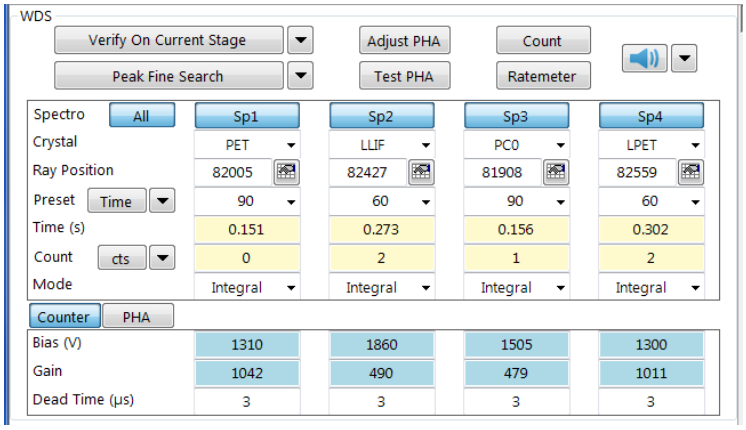
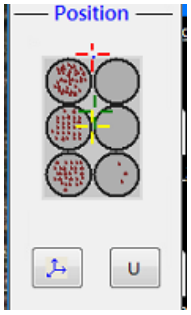
EPMA Crystal Exchange and Spectrometer Verification

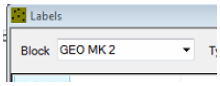
It is imperative that when you start using the instrument or change a crystal this procedure is performed.

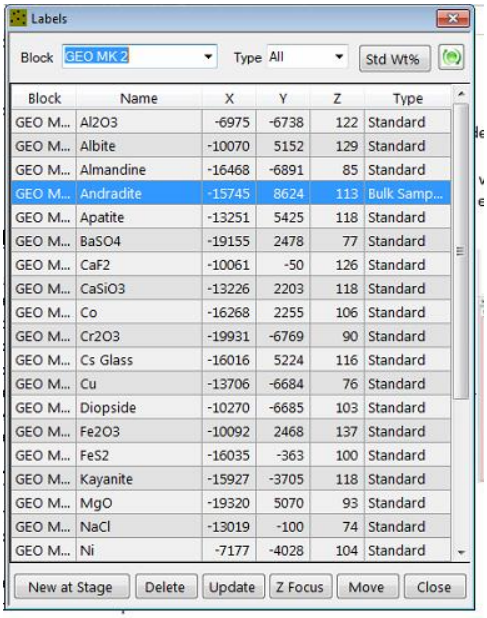
1.0 On SX Control, WDS section, select the appropriate crystals from the drop down tab for each Spectrometer.



2.0 Using the Position tool on the SX FIVE bar, click on the  icon. Make sure the HO6 holder is installed and in the chamber with all of the standards. Refer to sample Exchange SOP.

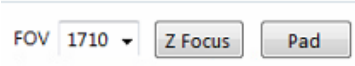


2.1 Select Block GEOMK 2  then double click on Andradite.

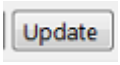


2.2 The stage will move to Andradite on the GEO MK 2 Standards Block.

2.3 Turn On Camera *Light*. Focus on the surface of the sample by selecting Z Focus



on the Camera window. This will auto focus the image.

2.4 Drive to a clean area on Andradite and press 

on the Labels window to refresh standard's location.

2.5 Set C2 to 2050. Under Beam Tuning, Press Fine Align (wait for it to complete). Adjust C2 to get 20nA of current. Measure must be On and beam Cut to read current measurements.

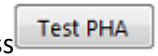
WARNING: *Standards a sensitive to beam current. Use 20nA or below when measuring/imaging standards. Failure to do this will cause damage to the standards.*

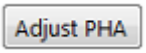
2.6 Turn scanning On and Beam On. Focus the SEM image on the surface of Andradite using Fine Focus on the control consol.

2.7 Turn scanning back Off and Beam Cut set the beam to 20um in size to avoid damaging the standard.

2.8 On the WDS Window select all four spectrometers and press 

. You will see the spectrometers move and Spectrum readings appear on SX Control / WDS Curves.

2.9 Once Verification routine ends, press 

. Wait for procedure to finish then press 

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Crystals are now verified and Peak Height Adjustment (PHA) calibrated.

Note: *If crystals are change any time during your session, this procedure will have to be performed again on the spectrometer containing the flipped crystal.*