

# **University of Arizona CAMECA SX100**

## **Setup Calibration Conditions**

**Page 2     Setup Calibration Conditions: Elements, Lines, Spectrometer, and Beam Conditions.**

**Page 14    Setup Calibration Acquisition: Point Locations.**

**Page 26    Run the Calibrations.**

# Step 1

If Necessary - Open the Settings Window.

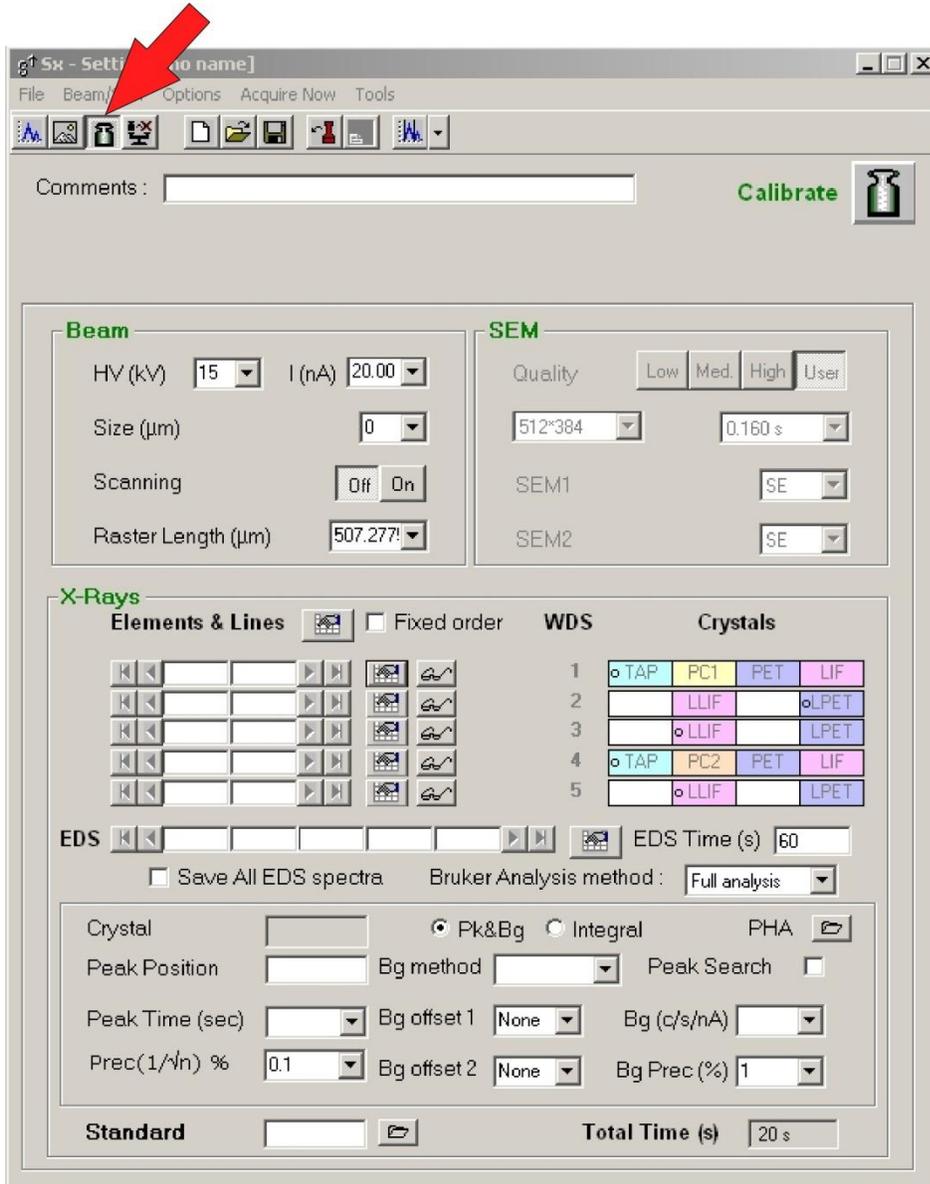


**Press This Button**

# Step 2

## In the Settings Window - Select the Calibration Setup Icon

Press This Button

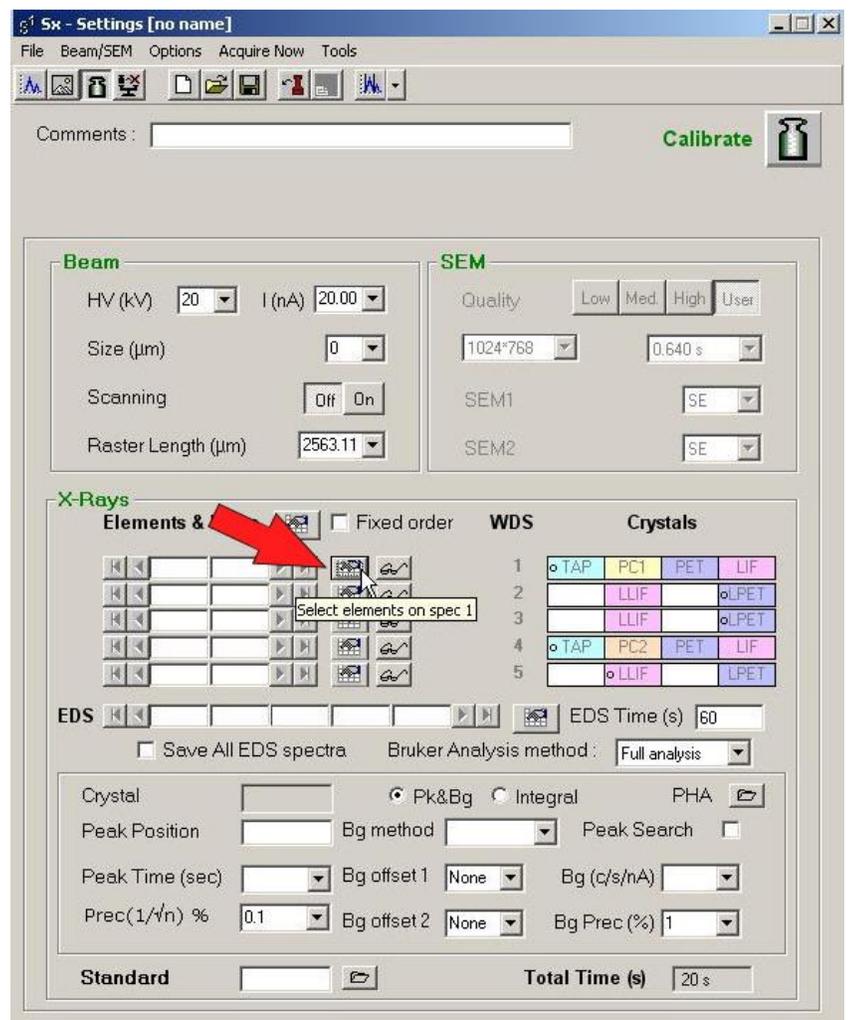


## Step 3a

Select an Element to Calibrate on the Spectrometer you intend to use for that Element.

For Example: For Silicon K $\alpha$  on TAP on Spectrometer 1:

Press This Button

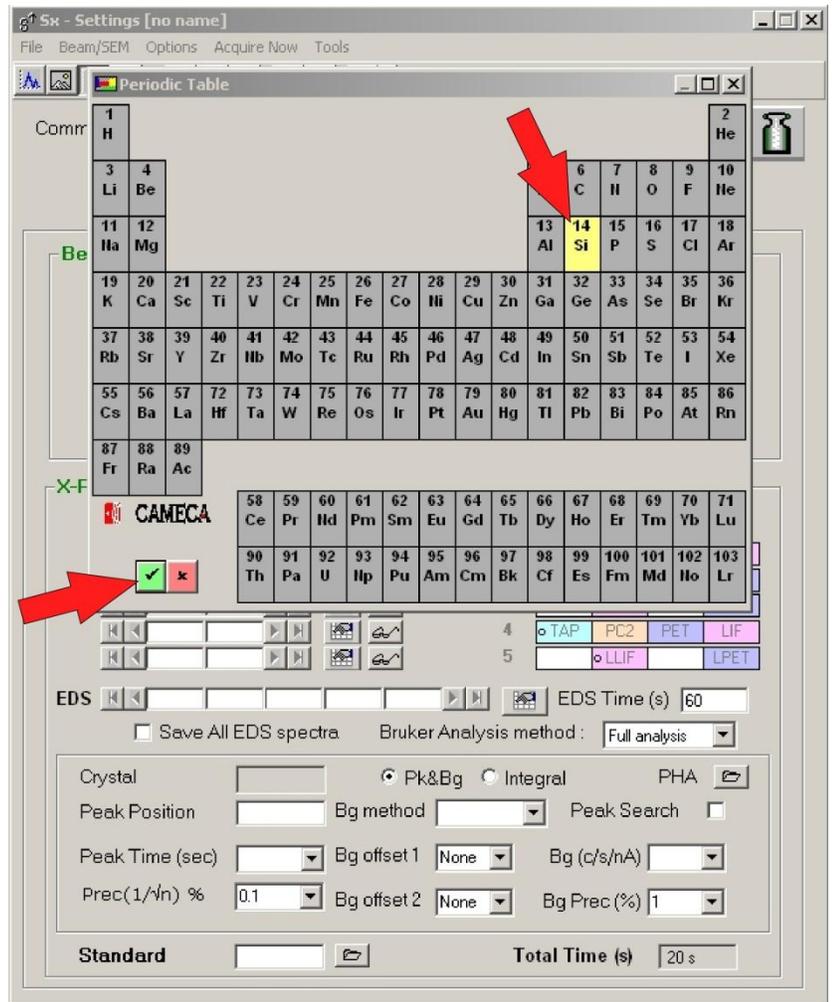


# Step 3b

## Select the Element you want from the Periodic Table

then

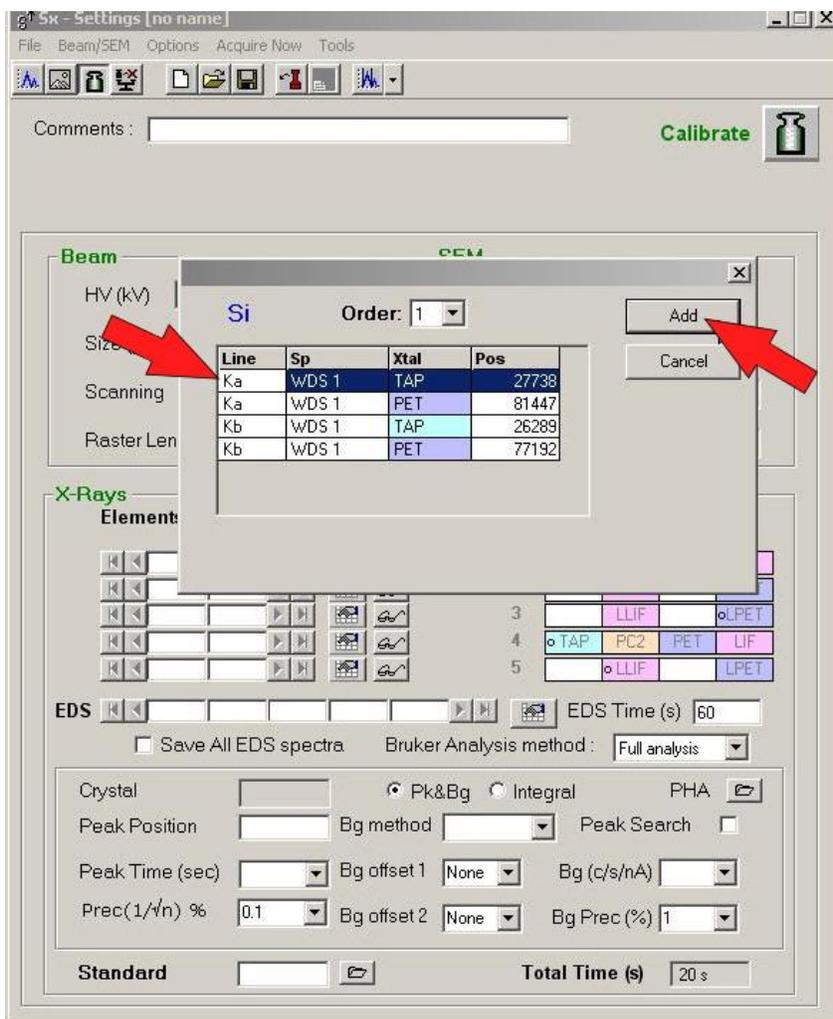
Press This Button



## Step 3c

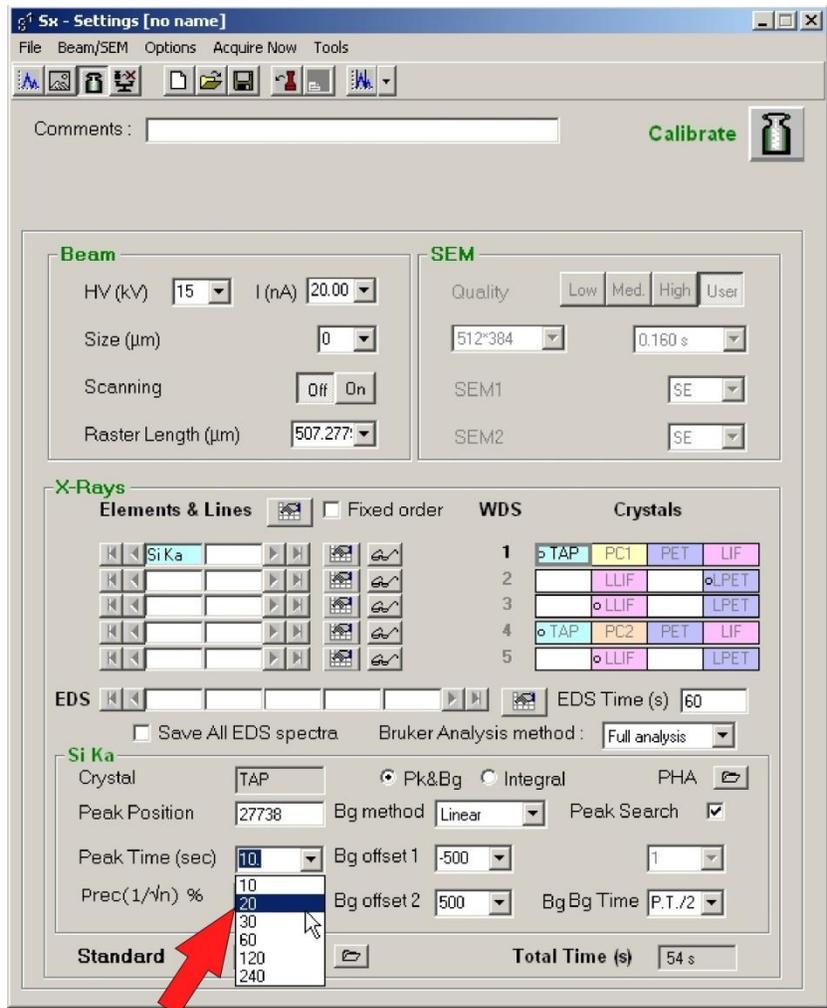
Select the x-ray line you want for that Element.

**Note:** Be sure that the line you select is on the crystal that is currently in position.



# Step 4

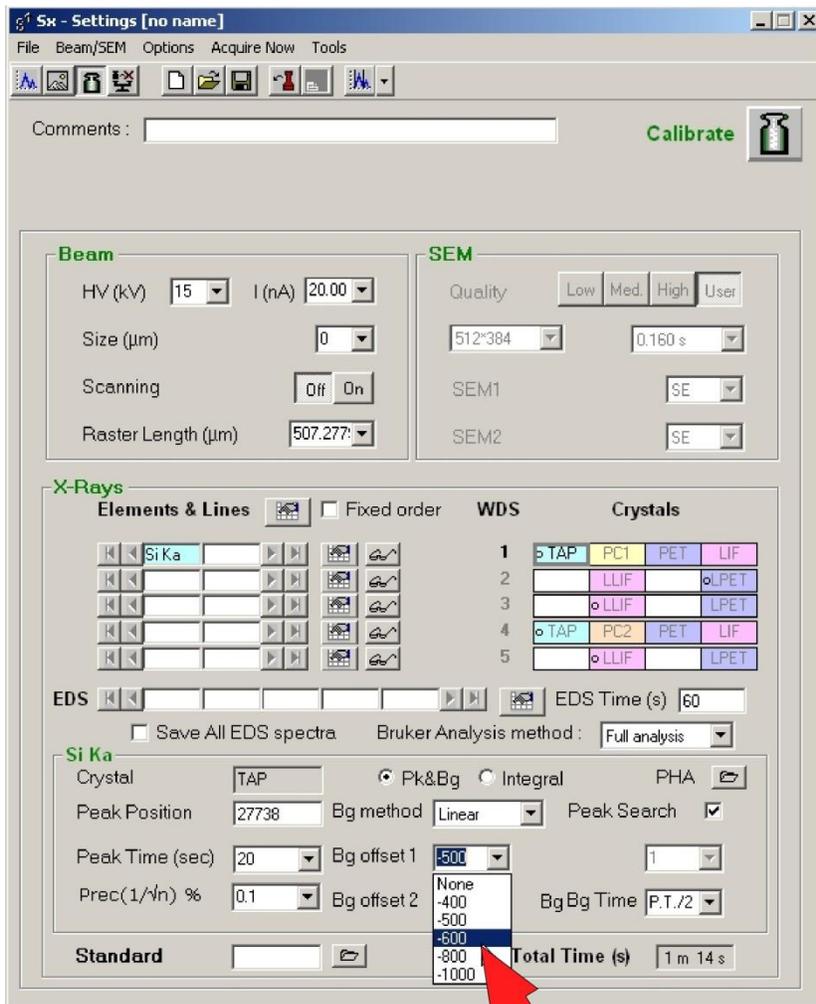
## Select the Peak Count Time.



Select the Peak Count Time

# Step 5

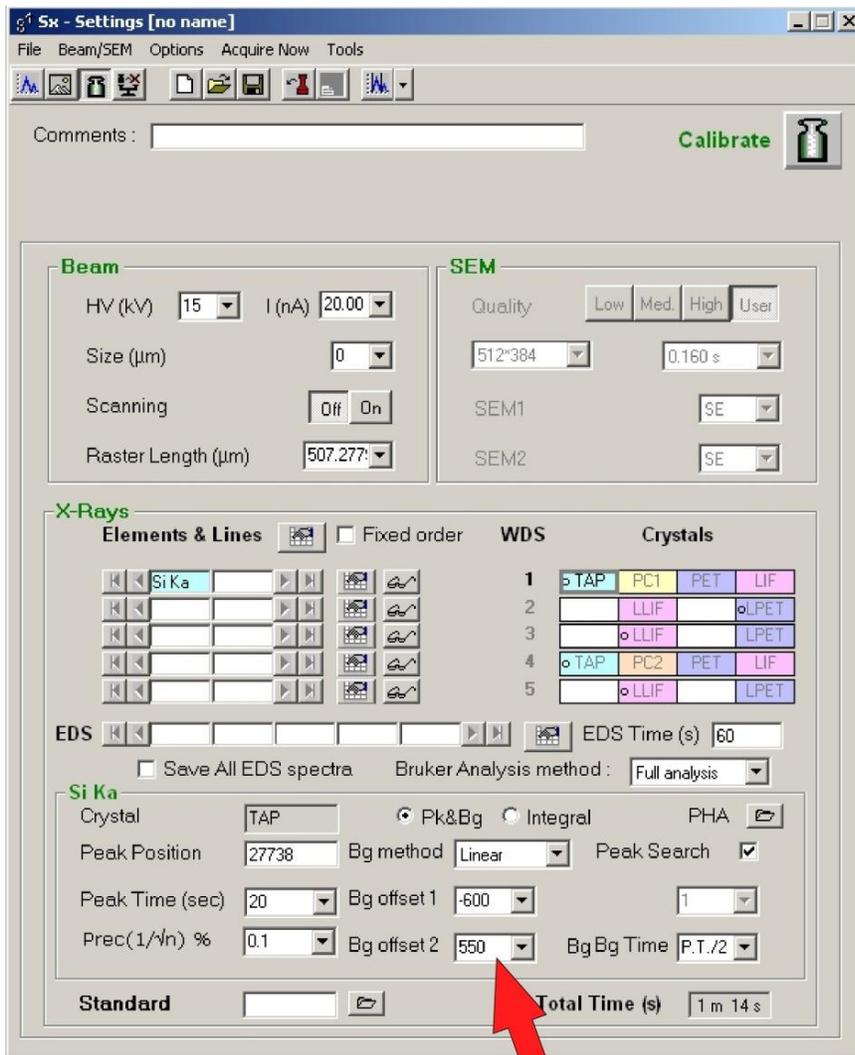
## Select the 1<sup>st</sup> Background Position.



Select the 1<sup>st</sup> Background Position

# Step 6

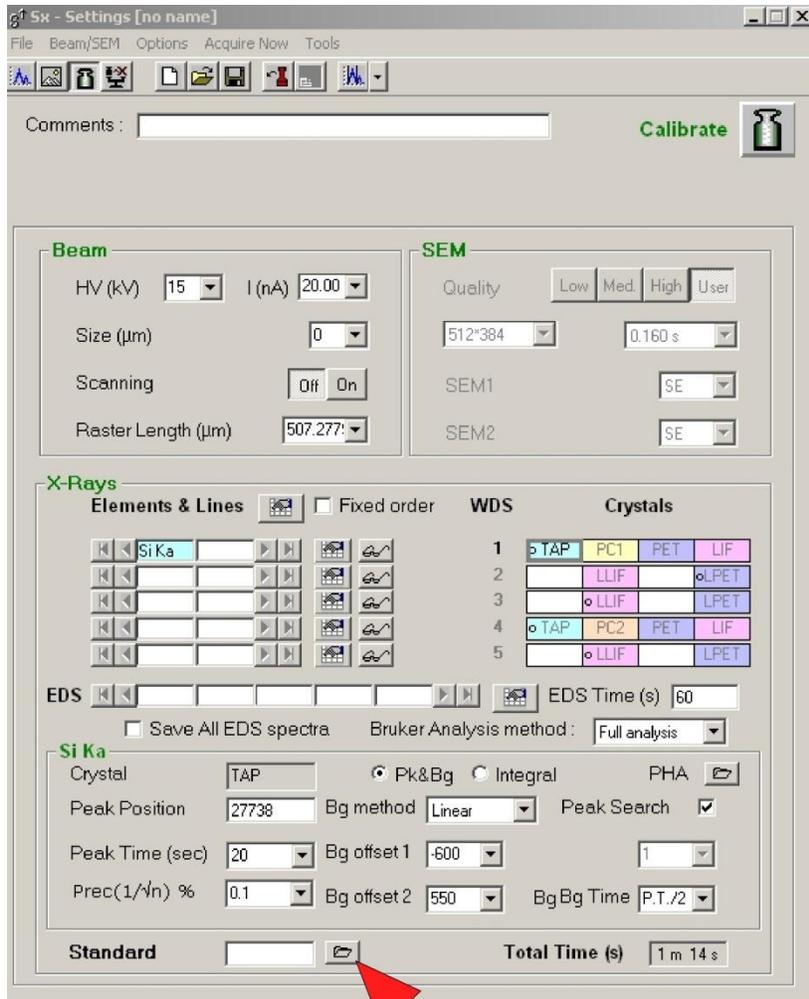
## Select the 2<sup>nd</sup> Background Position.



Select the 2<sup>nd</sup> Background Position

# Step 7a

## Select the Standard you will use for this Calibration.



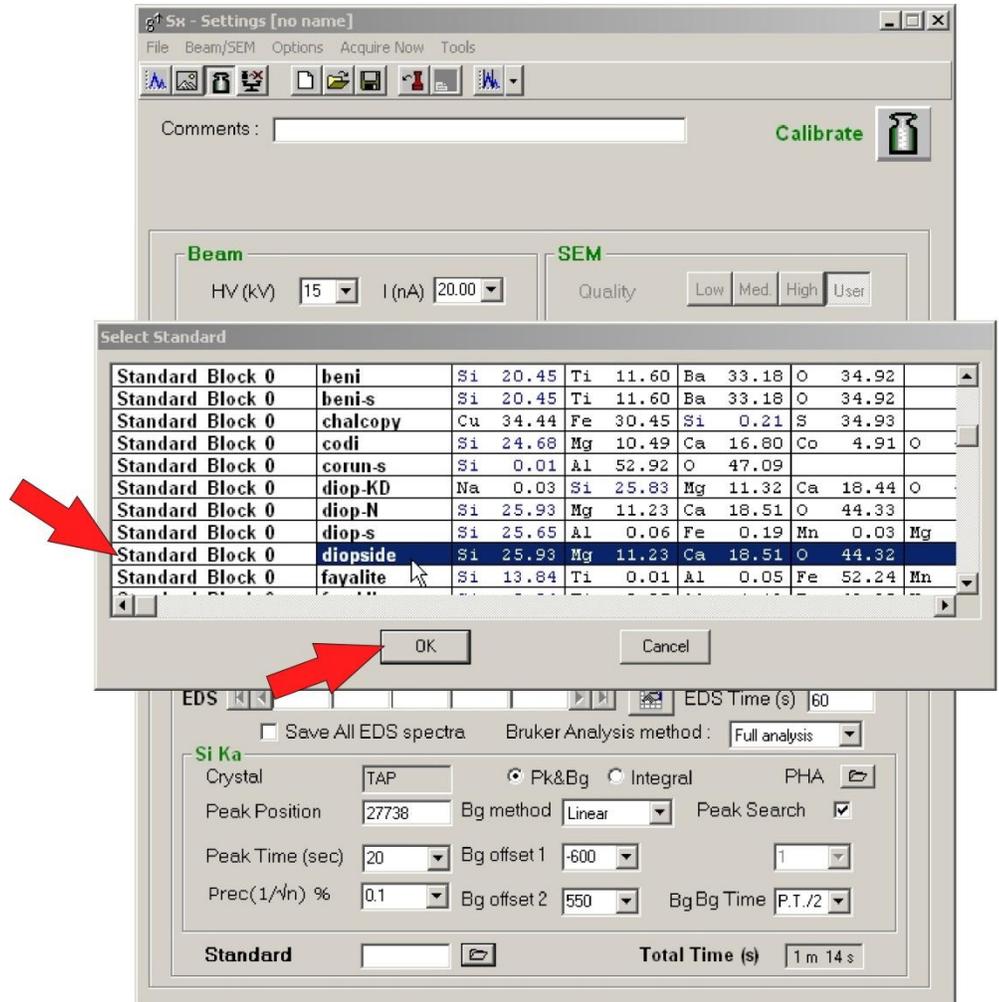
**Press This Button**

# Step 7b

Select the Standard

then

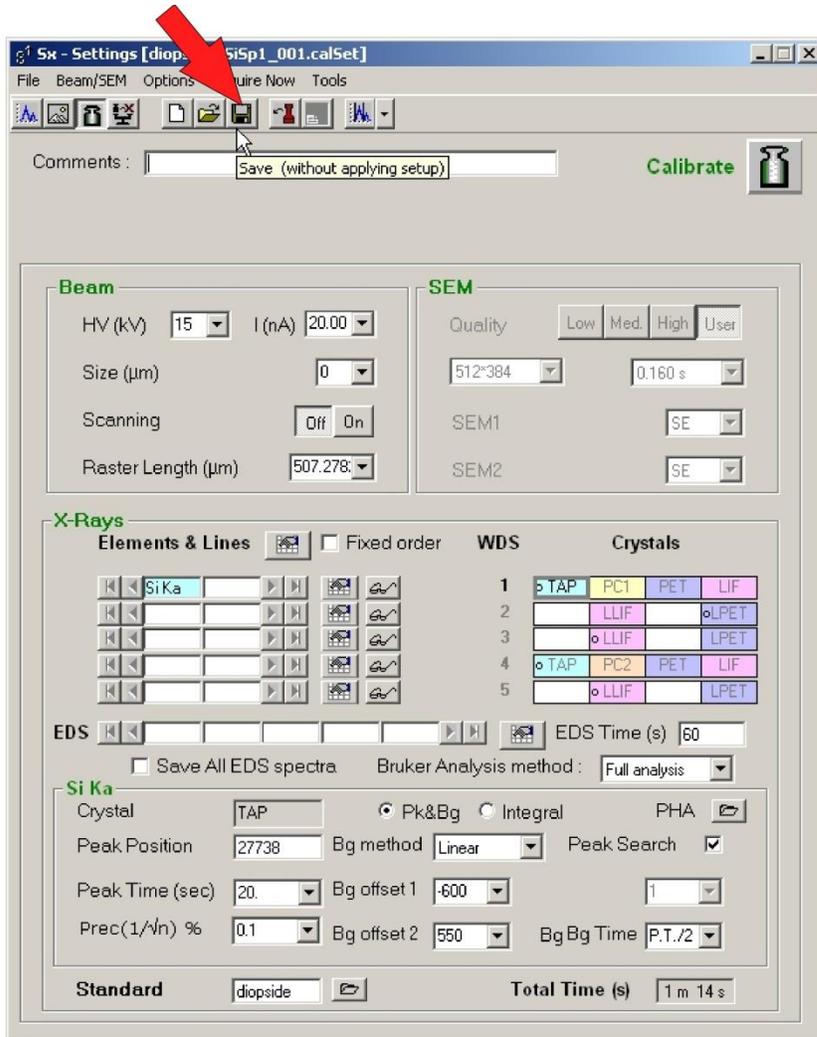
Press This Button



# Step 8

## Save the Calibration Setup

Press This Button



## **Step 9**

**Repeat Steps 3 – 9 for each element you plan to calibrate.**

**Note: If desired, it is possible to calibrate more than one element on a single standard/calibration setup.**

**Then**

## **Step 10**

**Go to: Set Up Calibration Acquisition Instructions (see below p. 14).**

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**Set Up the Calibration Acquisition**

# Step 1

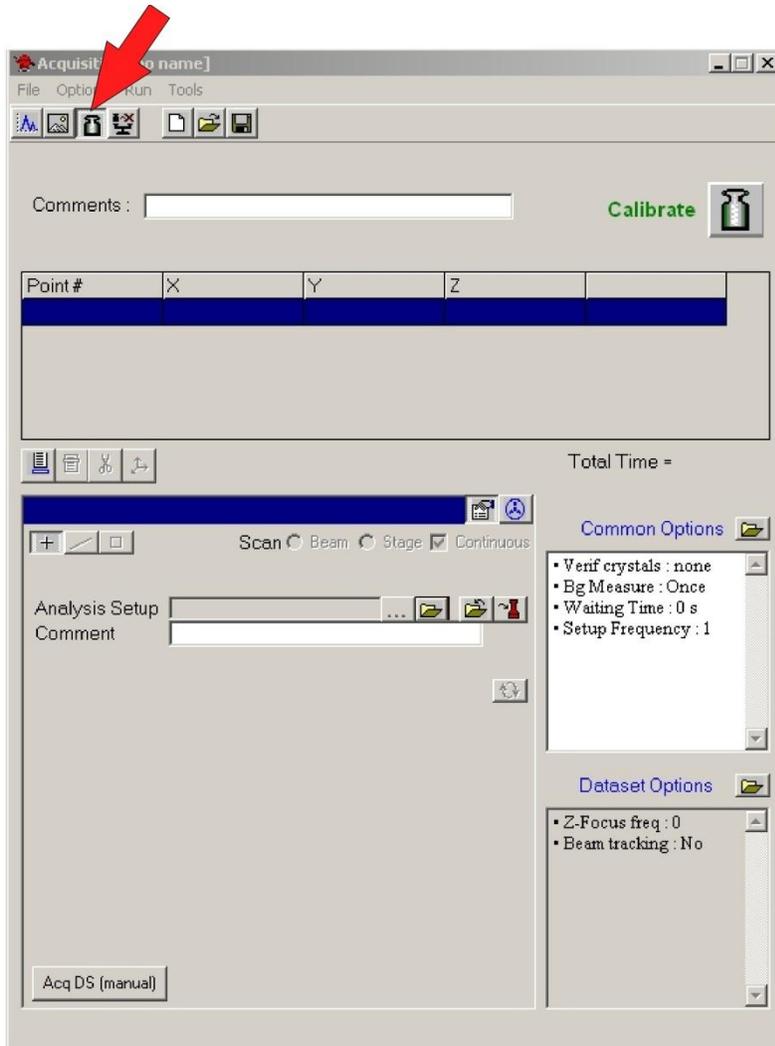
If Necessary - Open the Acquisition Window.



**Press This Button**

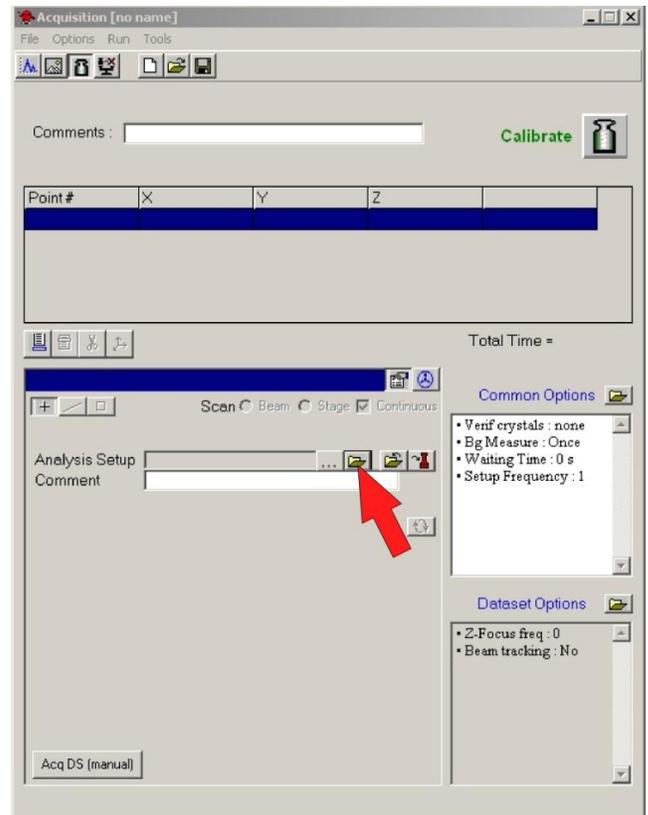
## Step 2

### In the Acquisition Window - Select the Calibration Setup Icon.



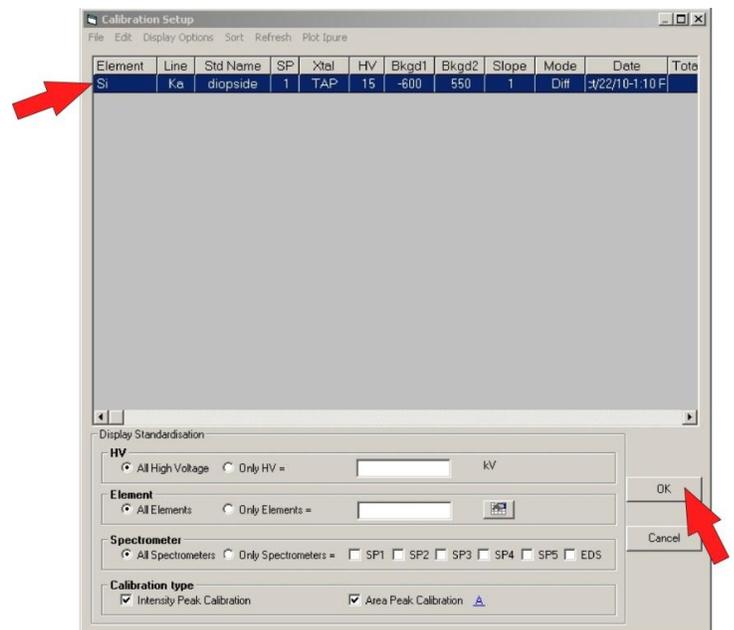
# Step 3

## Select the Analysis Setup Icon.



then

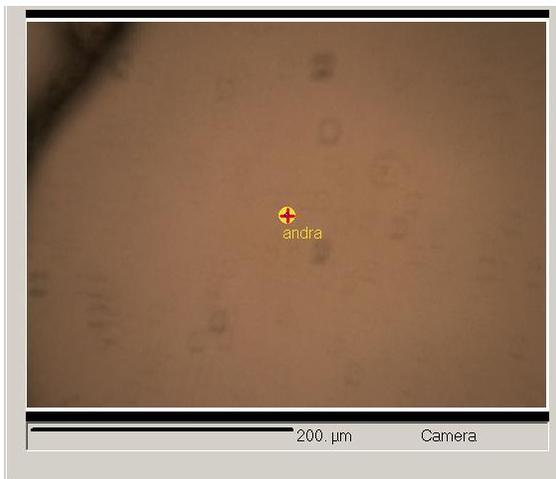
## Select a Calibration



## Step 4

**Determine the location for first point for the Calibration on the Standard.**

**A. Focus optically on the standard using either the Z wheel or the autofocus button.**



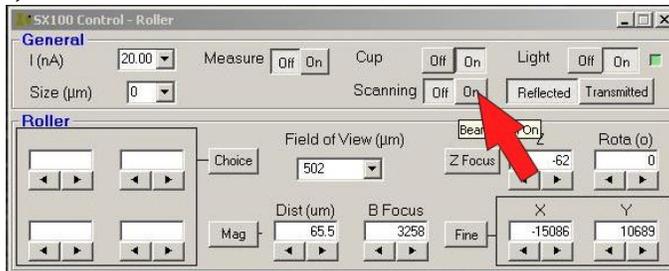
**Before Focusing**



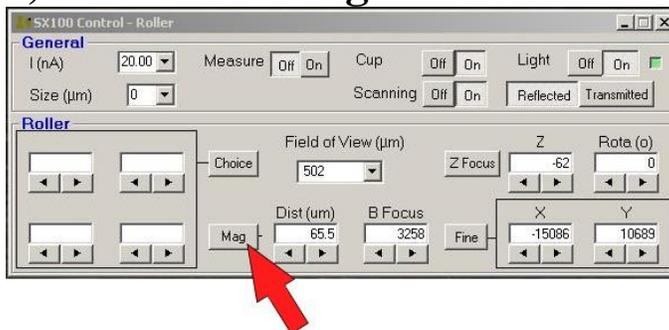
**After Focusing**

## B. Turn on the SEM Screen.

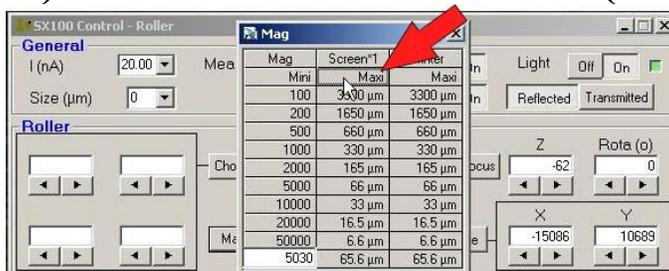
### i). Turn the Scan Button ON.



### ii). Click the Mag Button.



### iii). Double Click on "Maxi" (Minimum Magnification).

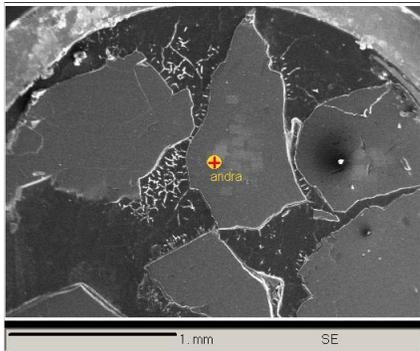


### iv). Click the Cup OFF button.

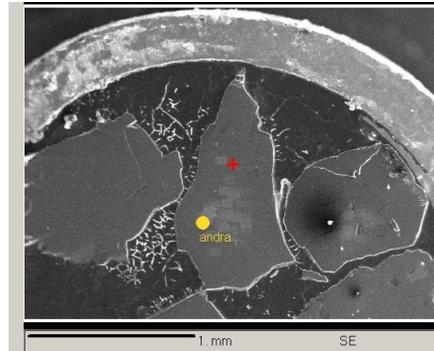


## C. Find a clean spot to set the first Calibration Point

i). If available, move to a place that hasn't been used before.

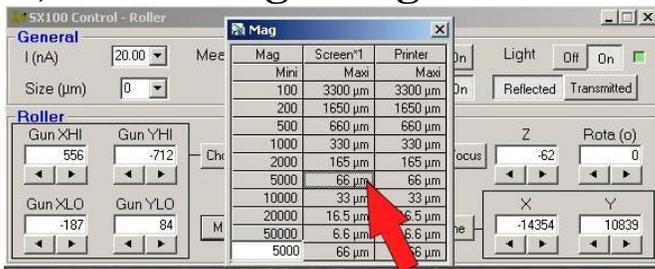


**Before Move**

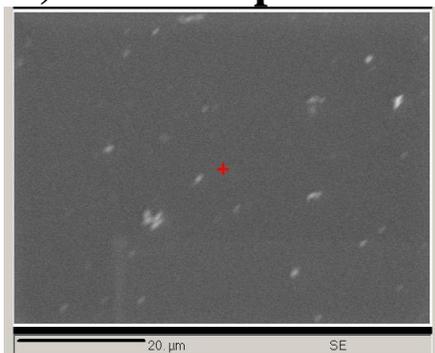


**After Move**

ii). Go to High Magnification. (Double click on 66um).



iii). Find a spot free of dust, cracks holes, etc.



## D. Set the starting point using the “U” button.



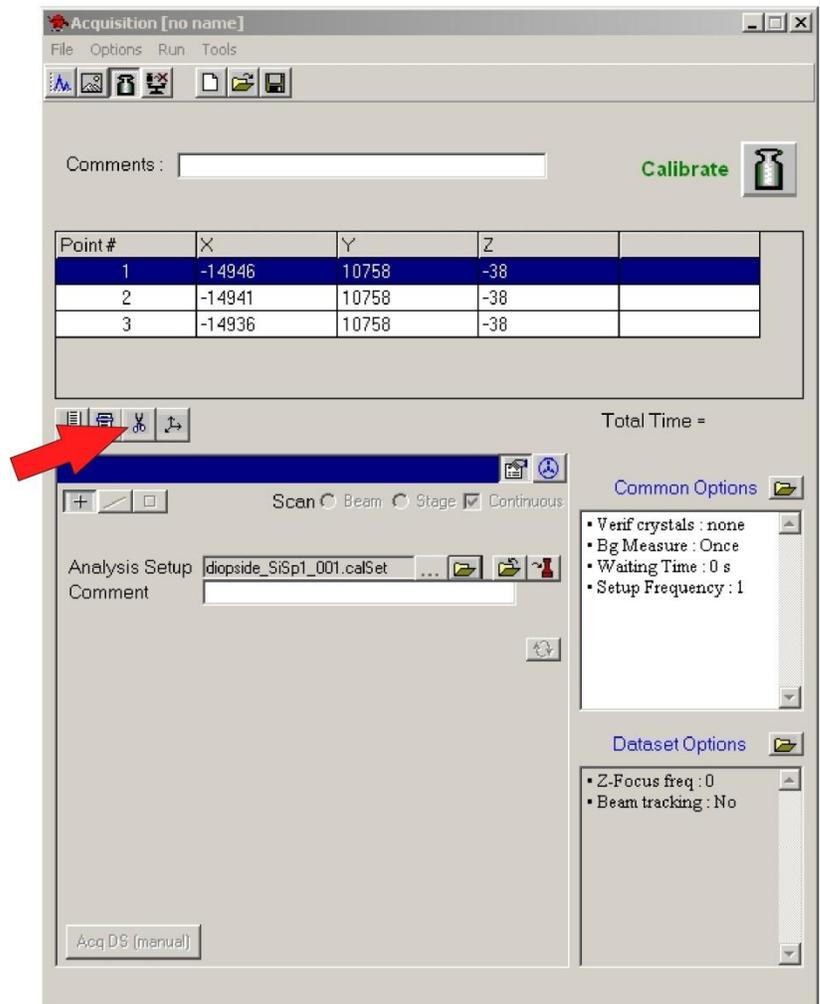
**Press This Button**

**Note: This step is important. Don't forget to do this.**

## Step 5

Delete the three points that appear in the Acquisition window.

**Press This  
Button  
3 Times**



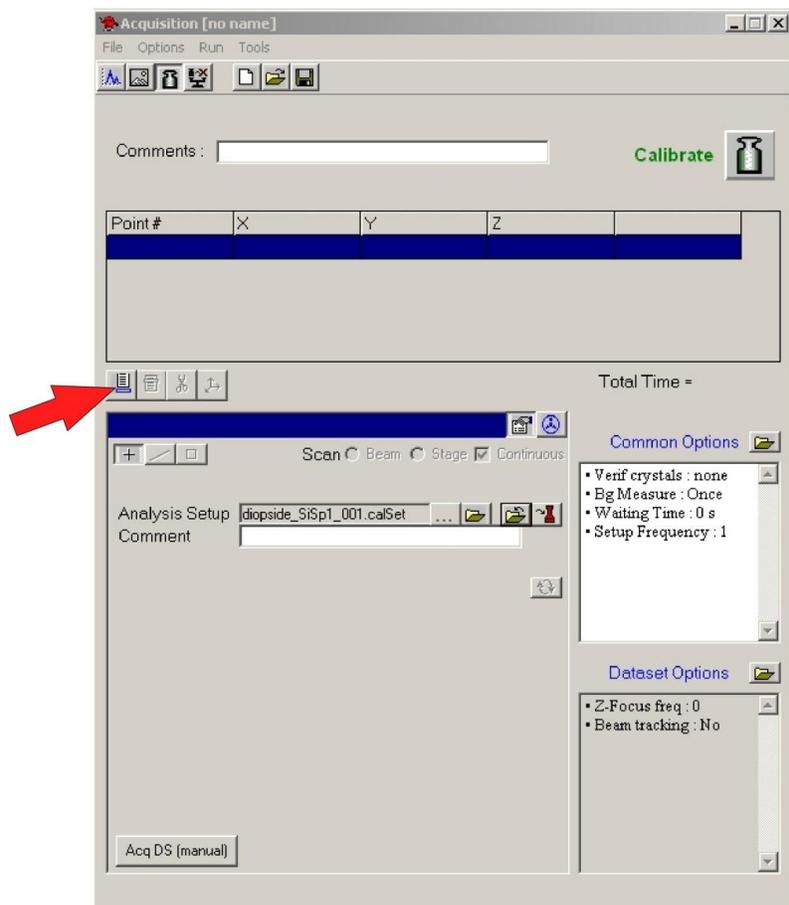
## Step 6

### Set the next Calibration Point

Move to a spot approximately 5 um away from your current location. Watch the SEM and Optical screens in order to avoid dust, holes, rounded edges, etc.

then

**Press This Button**



(Note: You can also use the button to the left of the joystick control to set points).

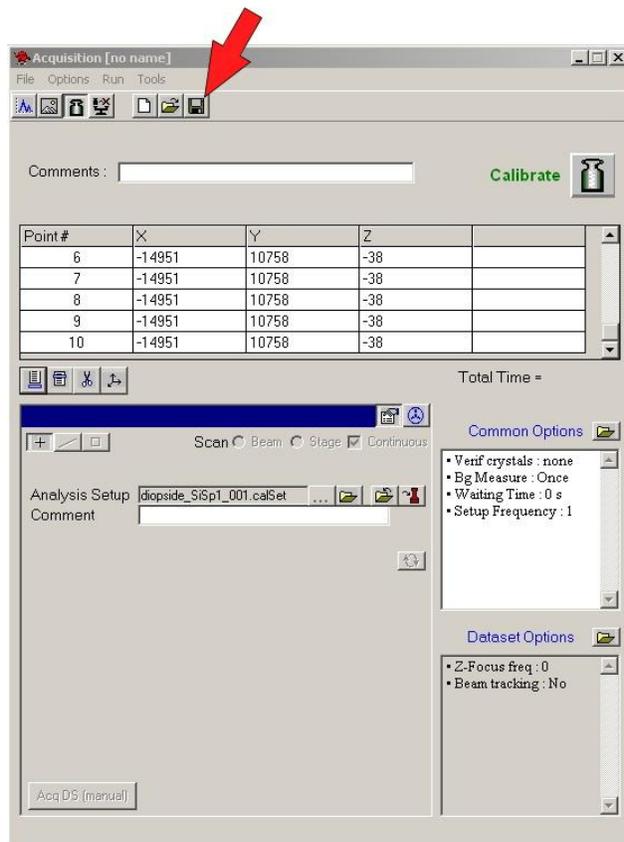
## Step 7

### Set up all the Calibration Points for this Standard and Save the Calibration Acquisition.

A) Set up 7 to 10 calibration points for this calibration by repeating Step 6 for each point.

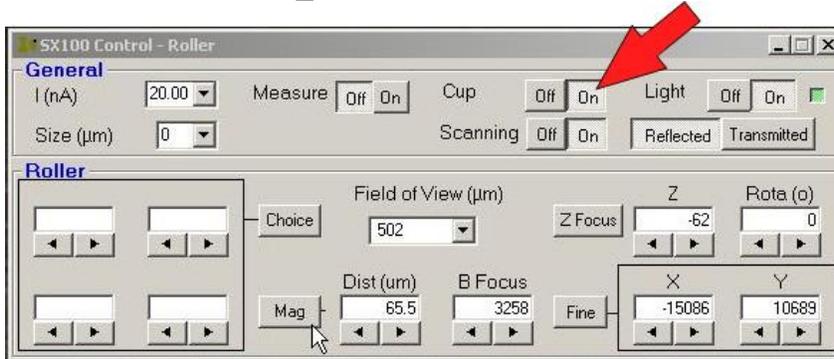
B) Save the Calibration Acquisition.

Press This Button



## Step 8

### Put the Cup ON



**Step 9**  
**Set up all the other Calibration Acquisitions you plan to do by repeating Steps 3 to 8 for each one.**

**Then**

**Step 10**  
**Go to: Run the Calibrations (see below p. 26)**

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**Run the Calibrations**

# Step 1

Open the Chain Acquisition window.

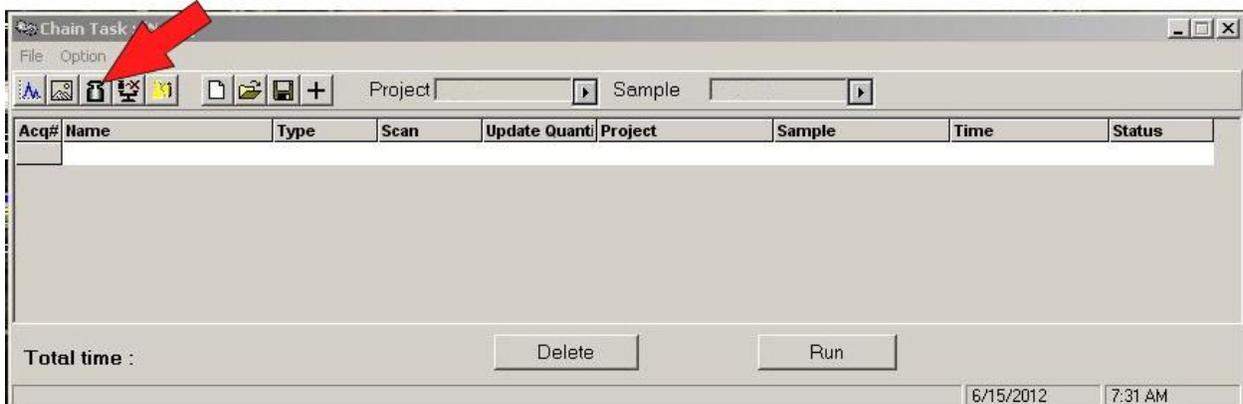


**Press This Button**

## Step 2

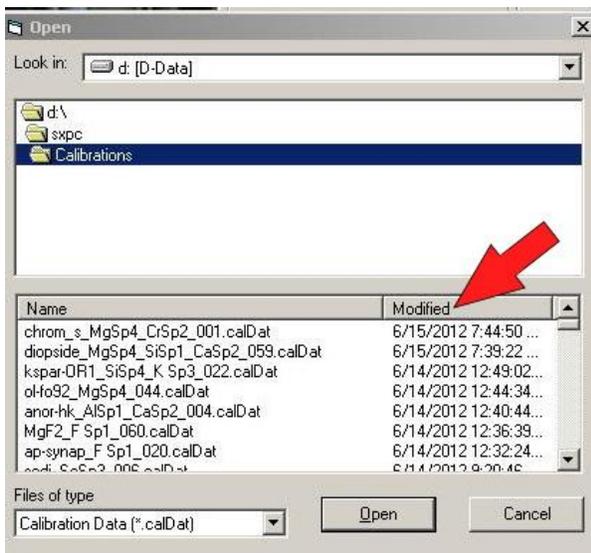
**In the Chain Task Window- Select the Calibration Icon.**

**Press This Button**



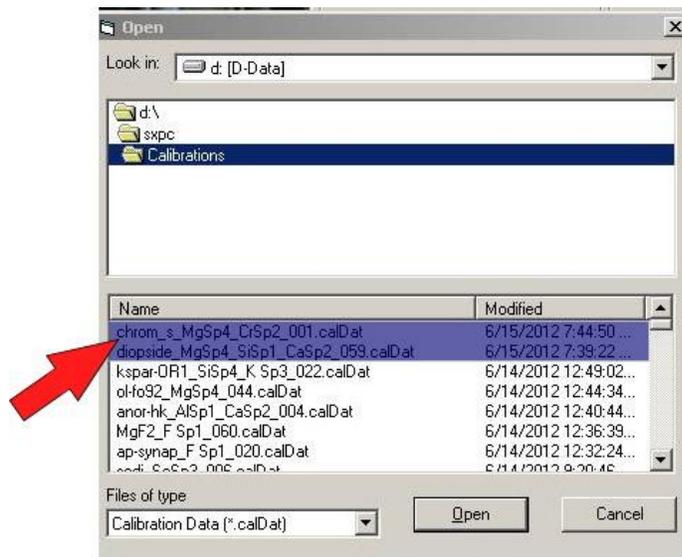
## Step 3

**Double click “Date Modified” in the pop-up window.**



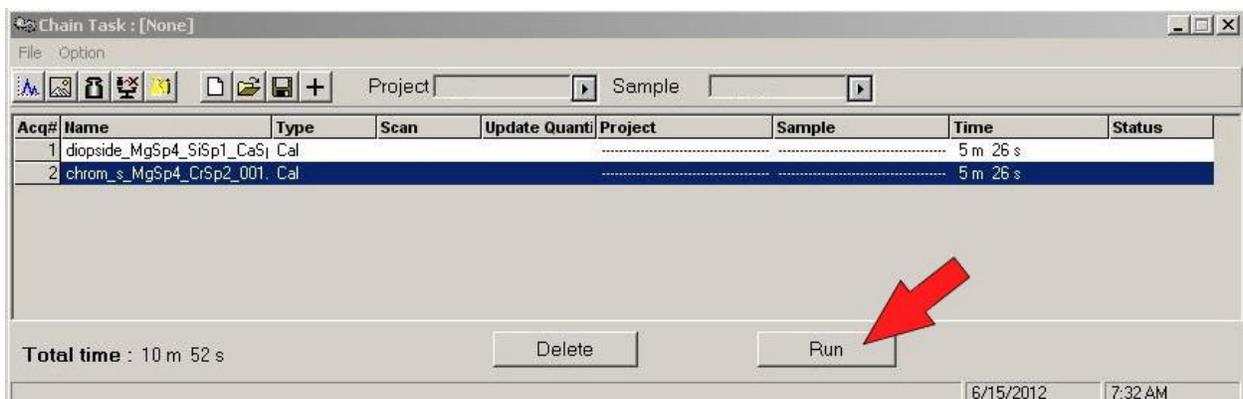
## Step 4

Select the Calibration Acquisitions you want to run.



## Step 5

Run the Calibration Acquisitions.



**Then**



**Press This Button**

**Step 6**

**Wait until the Calibrations have been Acquired.**

**Then**

**Step 7**

**Go to the document: Calling and Updating Analysis Files**