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SpecTk 1.3.2

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**MICHIGAN STATE**  
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# Requested Changes

## Fix Bugs

1. Error that occurs when trying to decrease 2D Scale (Minus Bug)
2. Log 1D scale is being shown improperly(Log Bug)
3. 1D ROI Fit isn't working (1D fit Bug)

## Change

- Update the About Page

## Resources

- File Path:
  - I:\projects\lisedev\SpecTcITk\SpecTk\_DAK\SpecTk
- More In Depth documentation:
  - [link](#)

# #1 Minus Bug

## Fix

- Current Code doesn't work because it requires 3 variables that aren't given

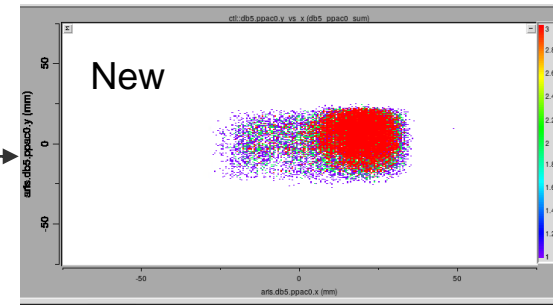
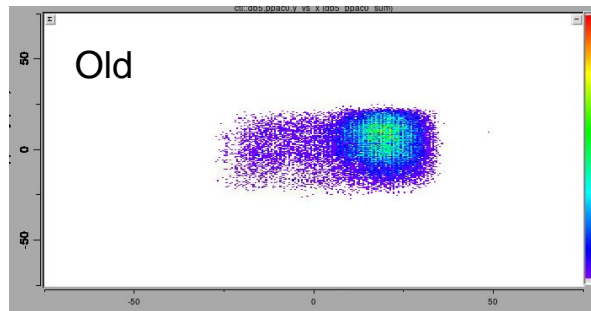
- Old:

- `itcl::body Display2D::ExpandMinus {xscreen yscreen mode} {`
- `if {[wininfo exist $graph]} {return}`
- `set x [$graph axis invtransform x $xscreen]`
- `set y [$graph axis invtransform y $yscreen]`

- New:

- `itcl::body Display2D::ExpandMinus {} {`
- `if {[wininfo exist $graph]} {return}`
- `set x [$graph axis invtransform x 100]`
- `set y [$graph axis invtransform y 100]`

No longer throws an error.



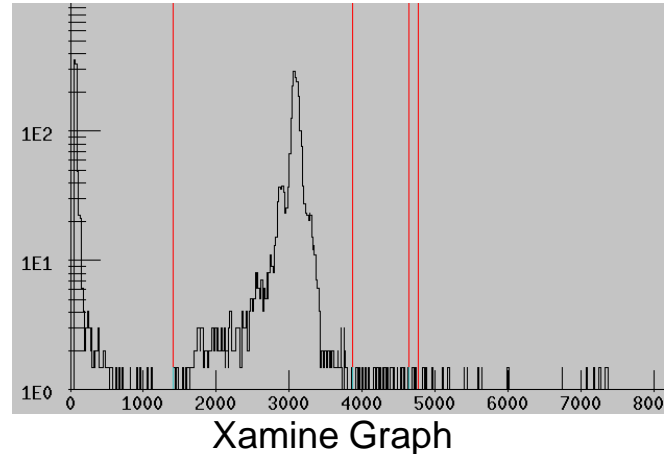
# #2 Log Bug

## Bug

- SpecTk doesn't know how to plot 0, so the graph never goes below 1
- It is important to mention that SpecTk does know the values are there it just doesn't know how to display it.

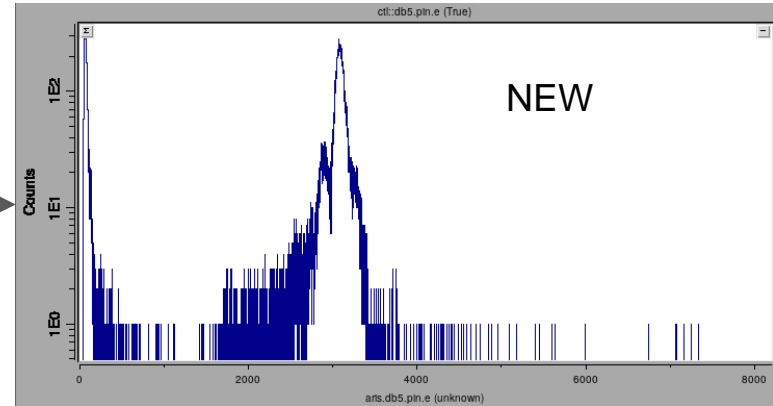
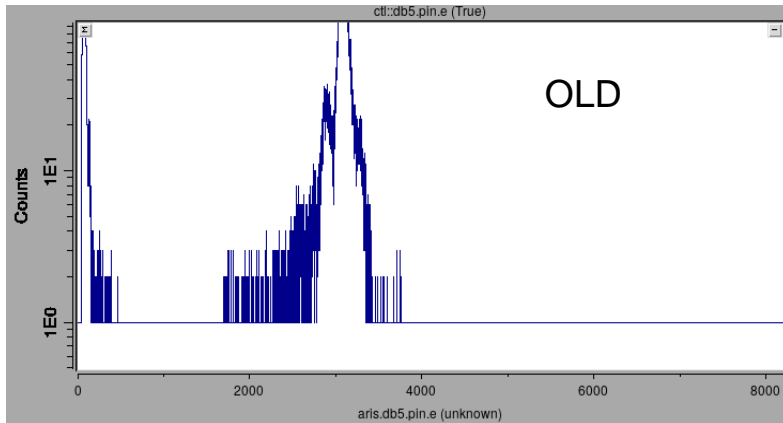
## Fix

- Added the toggleOffset which adds  $1E-9$  to any zero value so that it displays properly
- SetLin and SetLog Now Call toggleOffset
- ExpandMinus/Plus now sets the the min to .5 instead of 1



## #2 Log Bug

The New Graph has the Y-axis min set to 0 and Values equal to one are now discernible from values equal to 0.



# #3 1D Fit Bug

## Bug

- Code:
  - if {[lsearch [itcl::find object -isa Fit] \$name] == -1} {Fit \$name}
  - # Then initialize the Fit object with input choices
- The red is used to call the name of the data when we name things like `ctl::name tcl` thinks we are trying to use a new namespace and throws an error

## How To Use:

- Do what you would normally do to get a 1D Fit
- Make sure your data name doesn't have two colons in it
- Avoid names like `word::word`, `word.word` is fine though

The screenshot shows a software interface with a 'Fit' panel on the right and a data window on the left. The data window shows a table of counts with the following values:

Counts
0.82447 ± 0.027453
0.0054198 ± 2.5265e-05
1.88 ± 1.7341
88.5 ± 0.30492
1.21 ± 0.36013
25725 Counts

The 'Fit' panel shows the following parameters and fit equation:

**Data:** thing  
**ROI:** roi1  
**Fit:** Gaussian  
**Maximum iterations:** 100  
**Fit precision:** 1e-5  
**Points in display:** 200  
 Auto Guess  Results on Graph

$$y_0 + a(x - x_0) + Ae^{-\frac{(x-x_0)^2}{2\sigma^2}}$$

y0: 0.82447     a: -0.0005419  
 A: 212.88     x0: 3088.5  
 sig: 48.21

Gaussian fit on thing inside roi1  
Fit succeeded after 10 iterations  
Normalized Chi2 = 2.1703

y0 = 0.82447 ± 0.027453  
a = -0.00054198 ± 2.5265e-05  
A = 212.88 ± 1.7341  
x0 = 3088.5 ± 0.30492  
sig = 48.21 ± 0.36013  
area = 25725 Counts

Buttons: Print Display, Print Page, Close, Drawer, Do Fit, Clear History, Remove Fit