

### Data Selection Panel

Name of Image Matrix

Select Data ...

Name of Variable Matrix

Select Variables ...

This tutorial contains navigation buttons that enable you to move throughout the tutorial.

Please use the navigation buttons and not the page up/page down or arrow keys to navigate through the tutorials.

This is the 'Next' button. It takes you to the next frame or stop point.



This is the 'Previous' button. It takes you to the previous frame or stop point.



This is the 'Go to frame' button. It takes you to a specified frame.



This is the 'Go to URL' button. It takes you to a website link.



Press the 'Next' button below to start this tutorial.



### Data Selection Panel

Name of Image Matrix

imagedata\_dan01

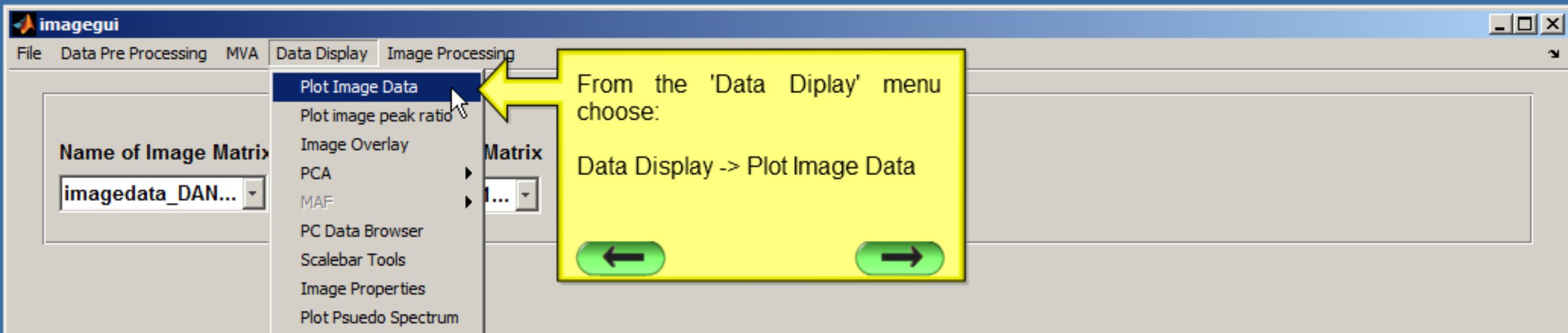
Name of Variable Matrix

exactmass\_dan01

This tutorial will demonstrate the image plotting functions of the imagegui.

Image plotting allows the user to create images and sum images of any peak(s) within a given data set.





### Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Selected Data

Image:

None

Variables

None

Variable List

Variables to Plot

Choose display mode

Add to Plot

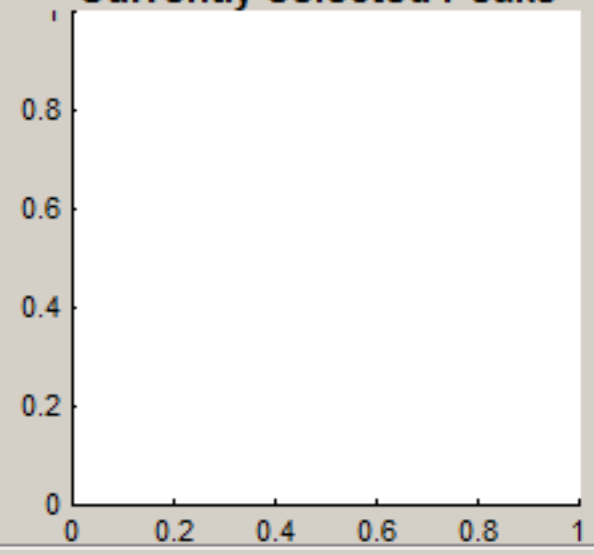
Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

Close Panel

Currently Selected Peaks



Browse all Peak Images

This brings up the image data plotting panel



Create ext Figure

Save Plot to File

### Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Selected Data

Image:

None

Variables

None

Variable List

Variables to Plot

Choose display mode

Add to Plot

Reset Plot

Name for Combined Selected Variable Image

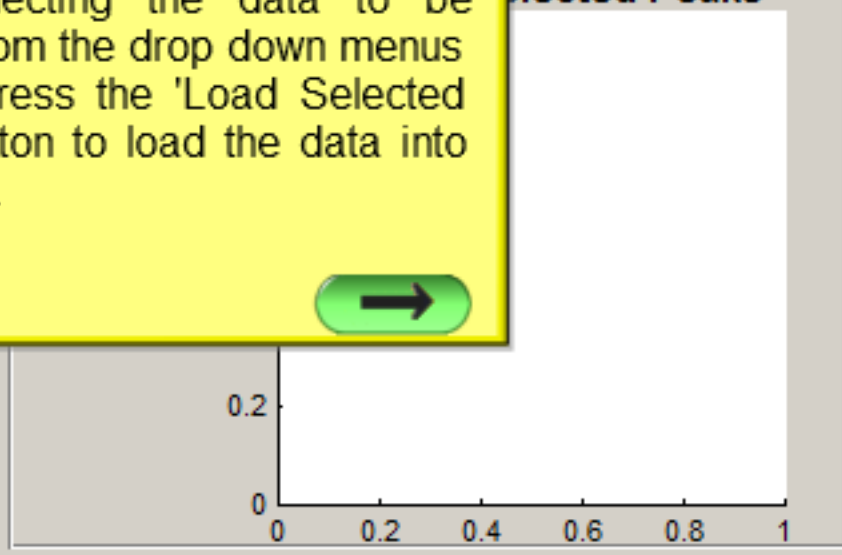
Save Combined Variable Image

Close Panel

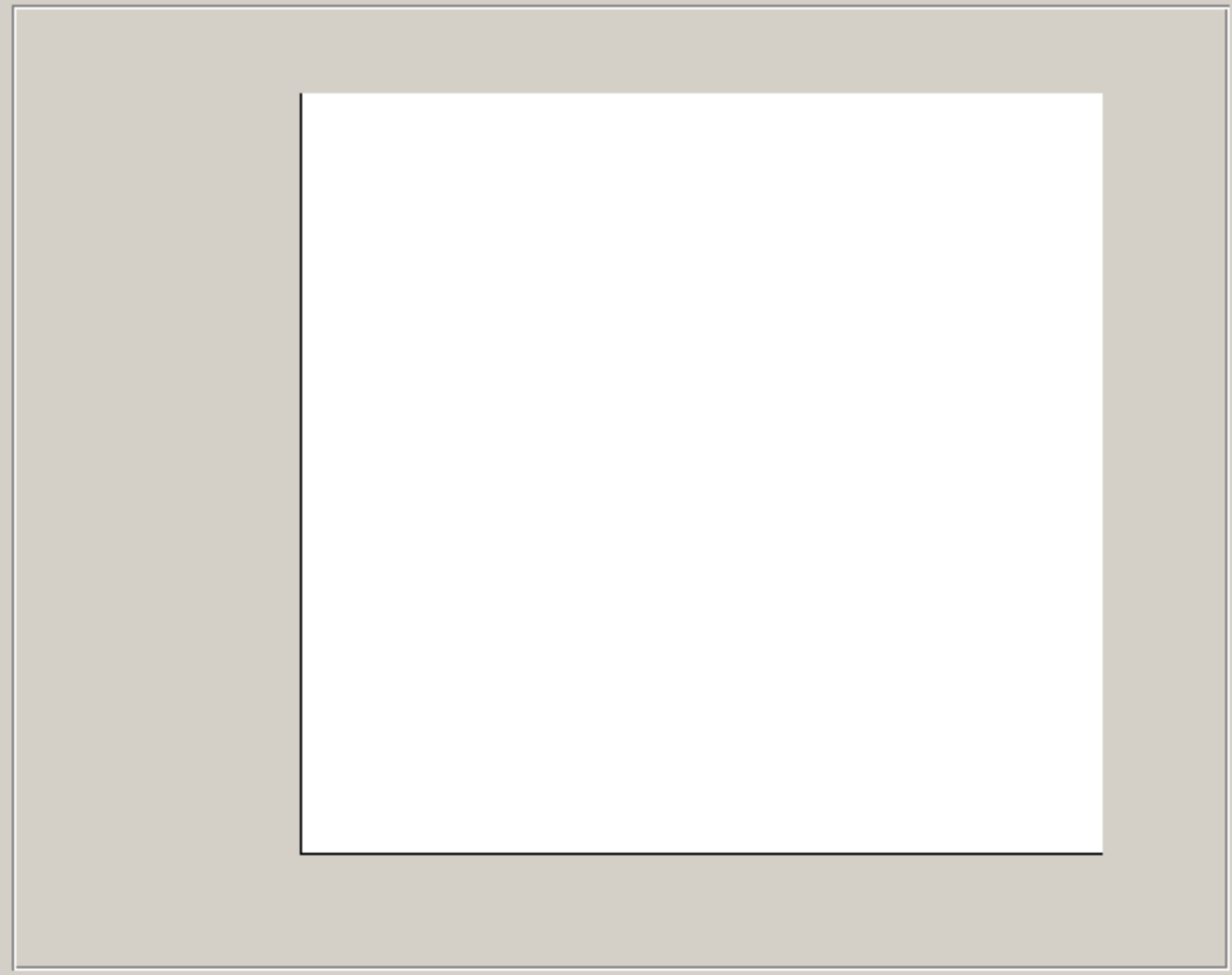
After selecting the data to be plotted from the drop down menus above, press the 'Load Selected Data' button to load the data into the panel.



Selected Peaks



Browse all Peak Images



Create ext Figure

Save Plot to File

## Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

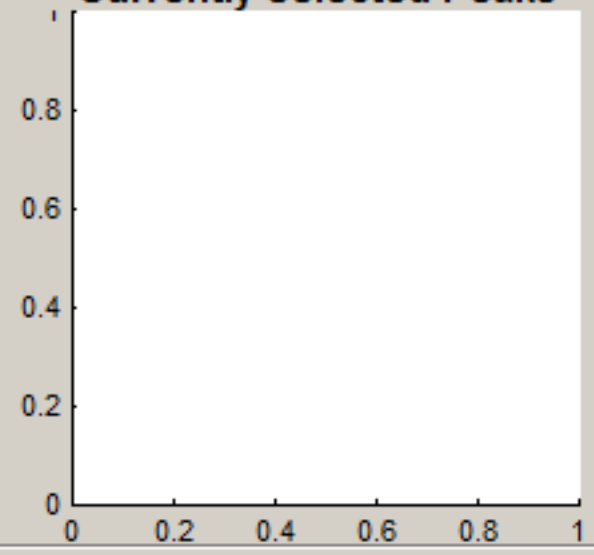
exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Currently Selected Peaks



Browse all Peak Images

Variable List

Variables to Plot

- 15.9971
- 25.0051
- 26.0054
- 31.9732
- 32.9727
- 34.9663
- 42.0052
- 58.9992
- 63.9539
- 71.0156
- 79.9478
- 96.9589
- 104.959
- 152.948
- 196.926
- 228.915
- 249.099

A list of all available variables is shown in the variable list.



Choose display mode

Add to Plot

Reset Plot

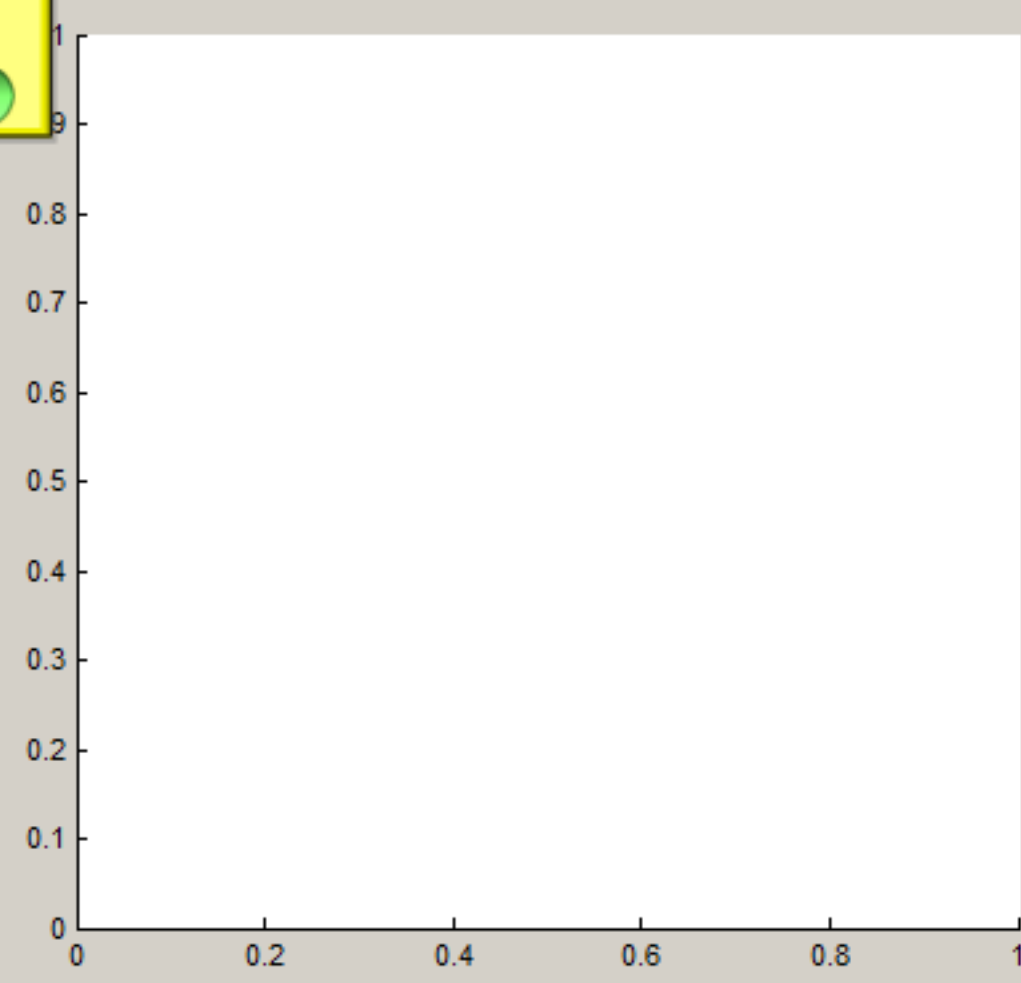
Name for Combined Selected Variable Image

Save Combined Variable Image

Close Panel

Create ext Figure

Save Plot to File



## Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

15.9971  
25.0051  
26.0054  
31.9732  
32.9727  
34.9663  
42.0052  
58.9992  
63.9539  
71.0156  
79.9478  
96.9589  
104.959  
152.948  
196.926  
228.915  
249.099

Variables to Plot

Choose display mode

Add to Plot

Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

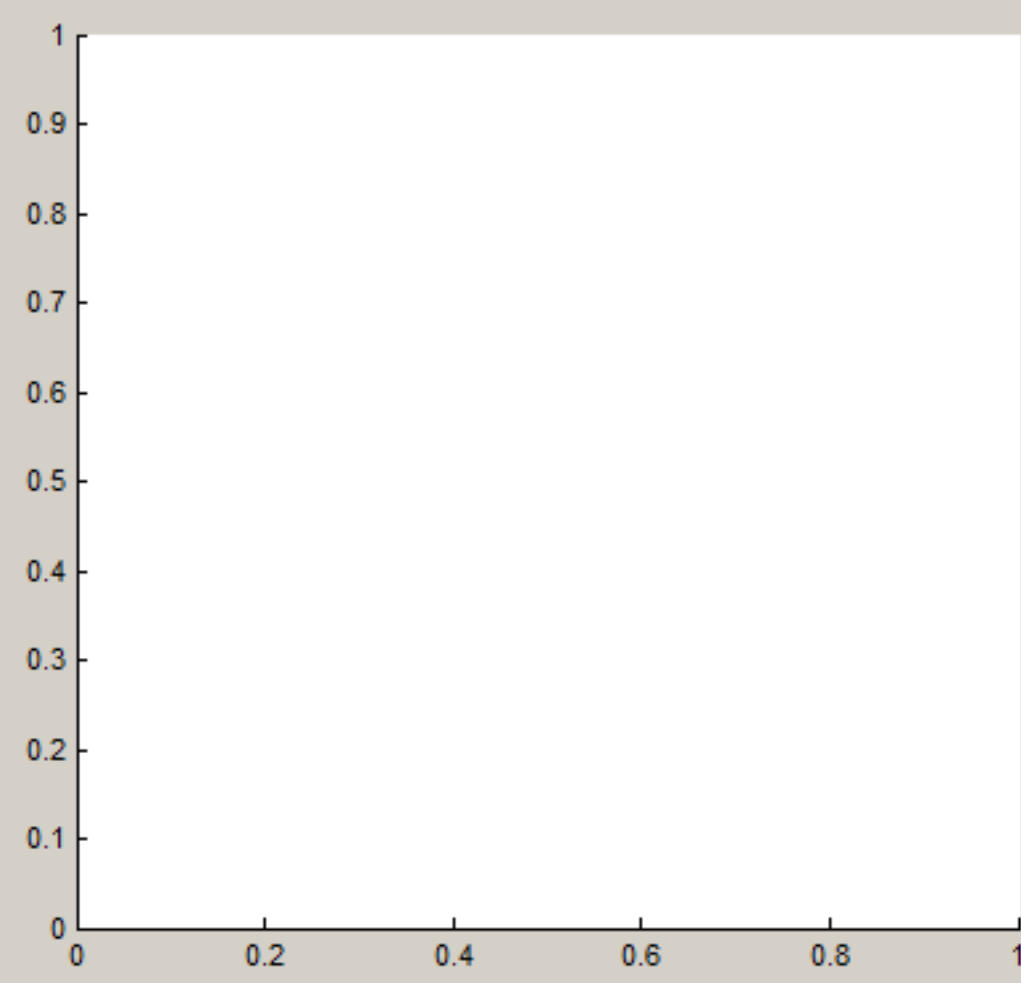
Close Panel

Currently Selected Peaks

Press the 'Browse all Peak Images' button to browse through the individual peak images in a separate window.



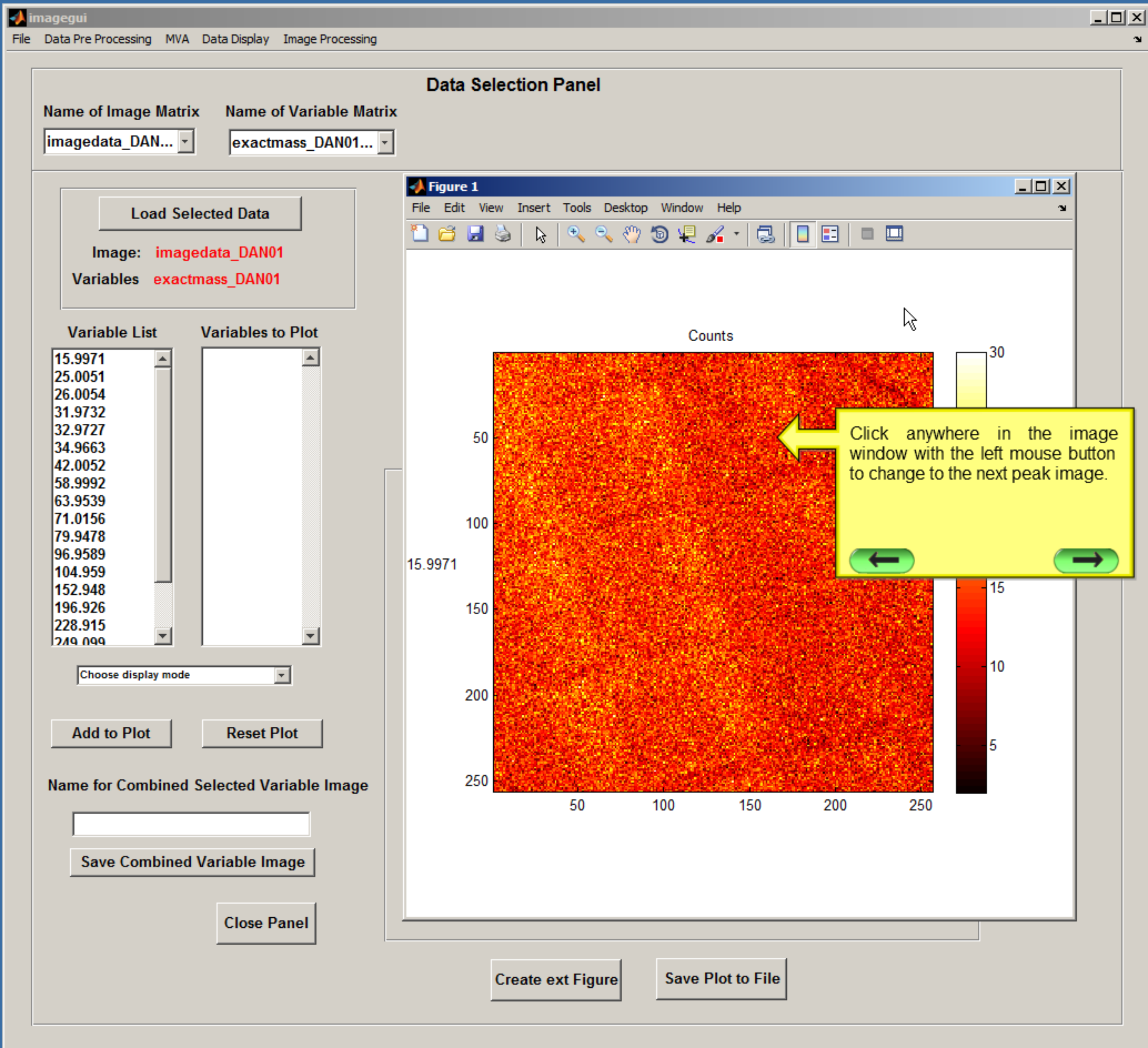
Browse all Peak Images



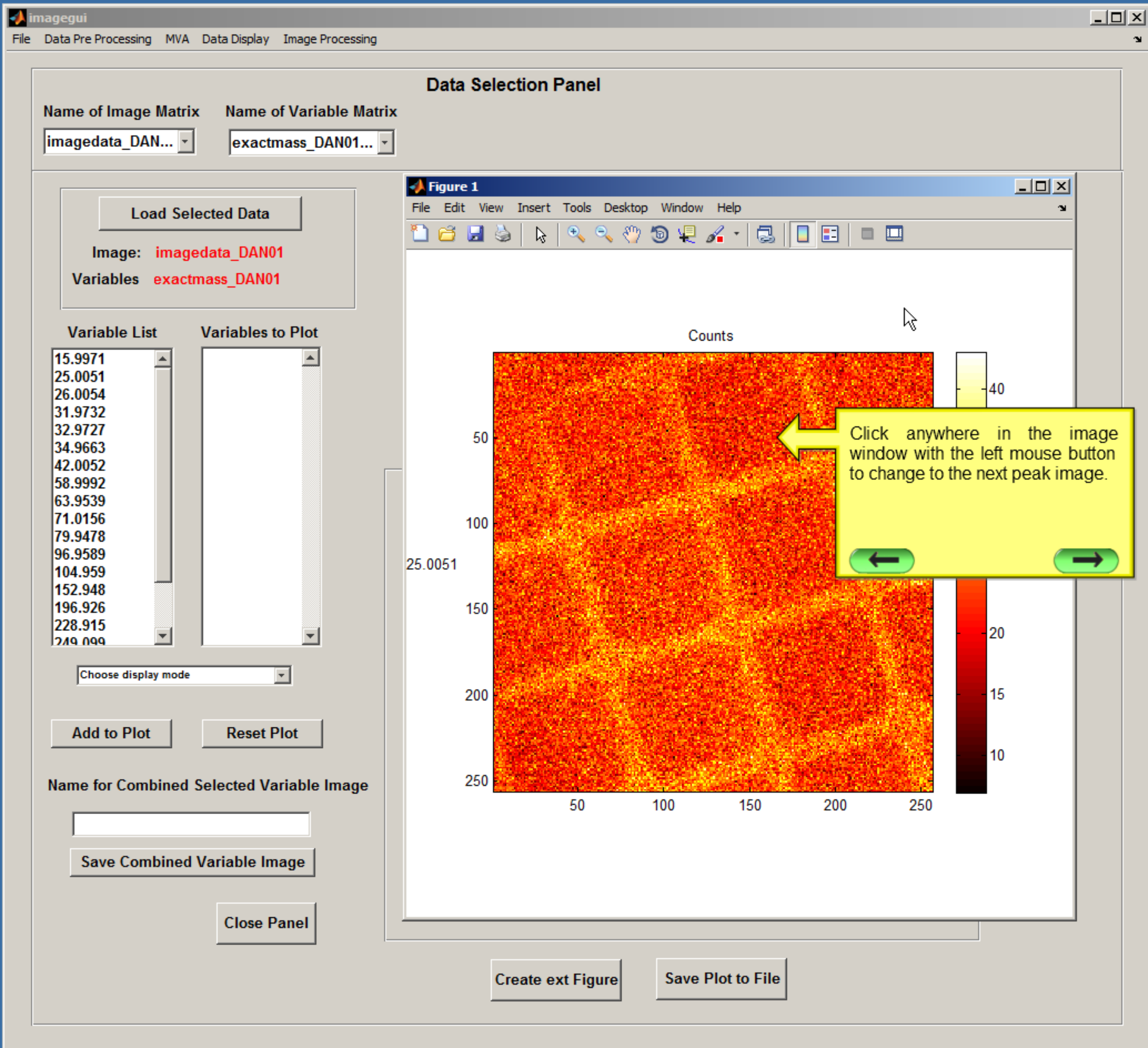
Create ext Figure

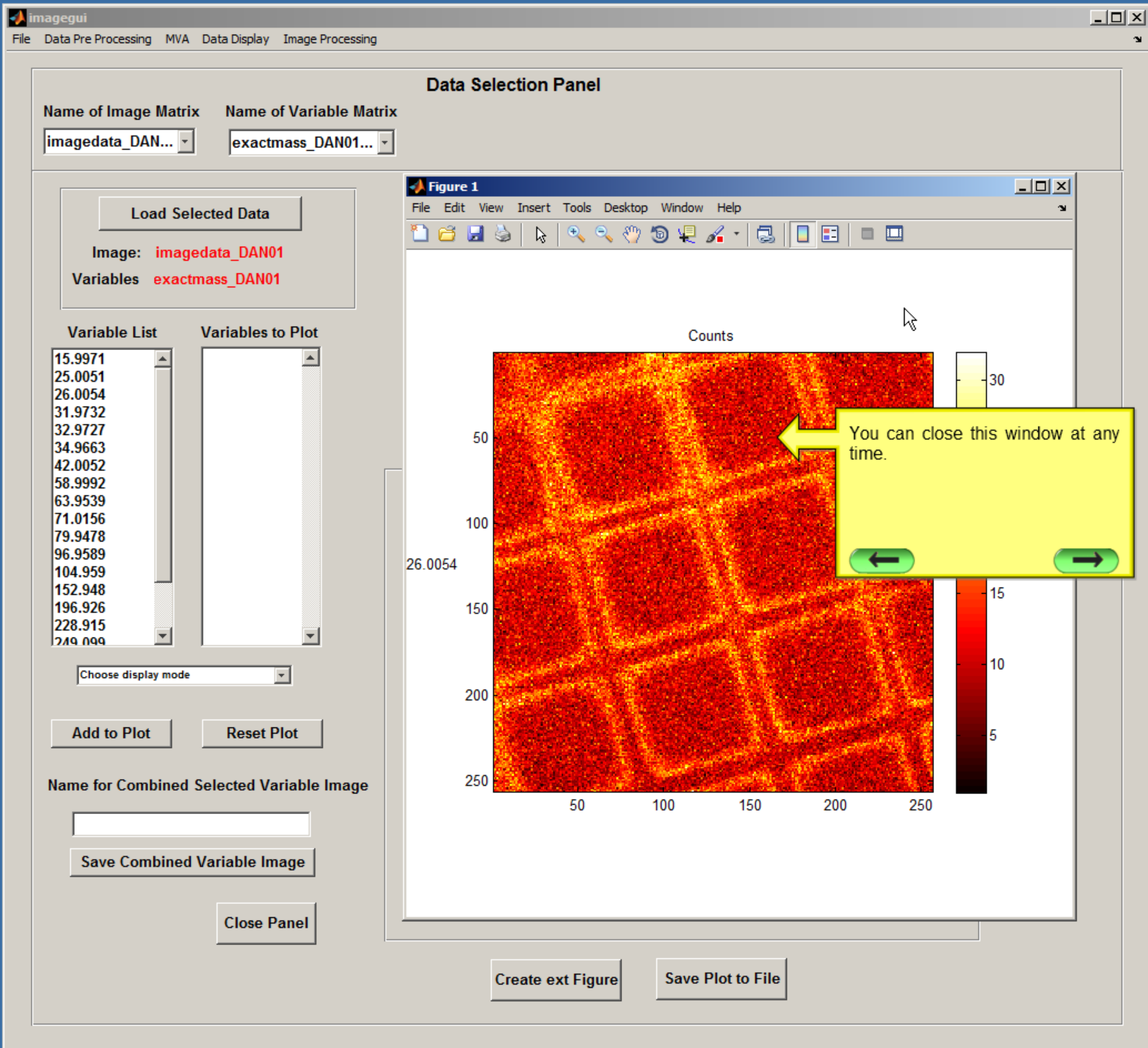
Save Plot to File













## Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

- 15.9971
- 25.0051
- 26.0054**
- 31.9732
- 32.9727
- 34.9663
- 42.0052
- 58.9992
- 63.9539
- 71.0156
- 79.9478
- 96.9589
- 104.959
- 152.948
- 196.926
- 228.915
- 249.099

Variables to Plot



Choose display mode

Add to Plot

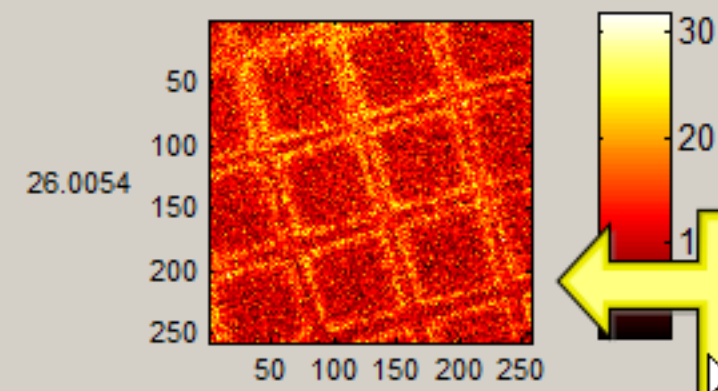
Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

Close Panel

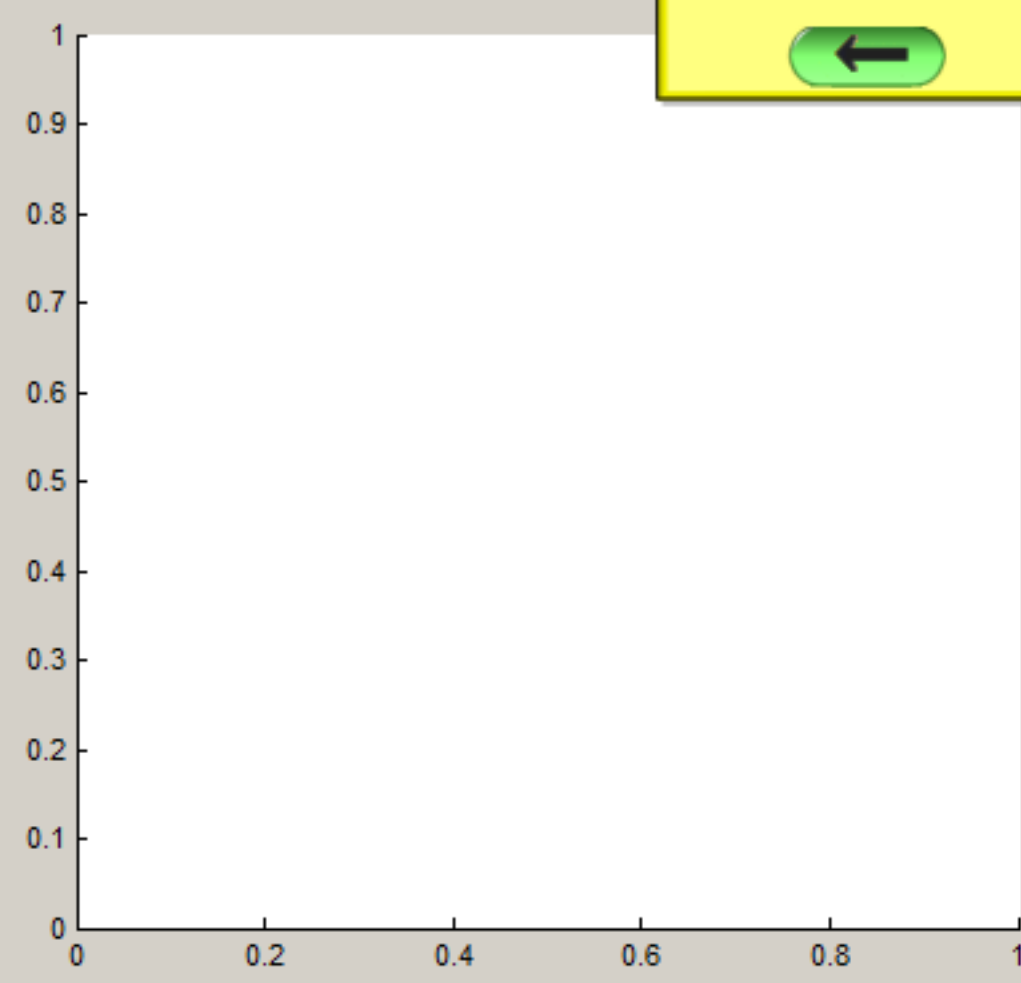
### Currently Selected Peaks



Browse all Peak Images

Selecting a variable from the 'Variable List' generates an image of that variable in this box.

This allows the user to browse through the peak images to find peaks of interest.



Create ext Figure

Save Plot to File

## Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

- 15.9971
- 25.0051
- 26.0054
- 31.9732
- 32.9727
- 34.9663
- 42.0052
- 58.9992
- 63.9539
- 71.0156
- 79.9478
- 96.9589
- 104.959
- 152.948
- 196.926
- 228.915
- 249.099

Variables to Plot



Choose display mode

Add to Plot

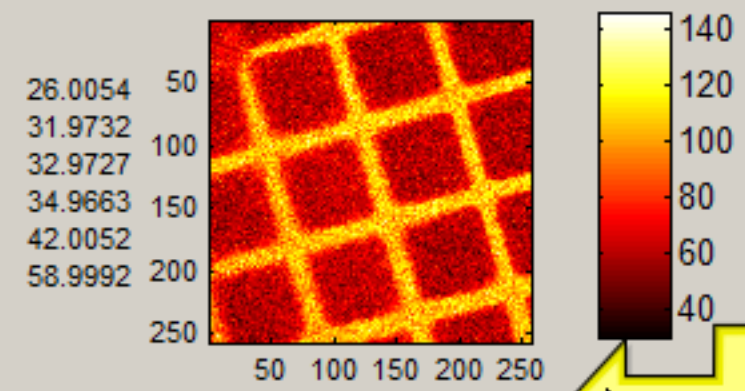
Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

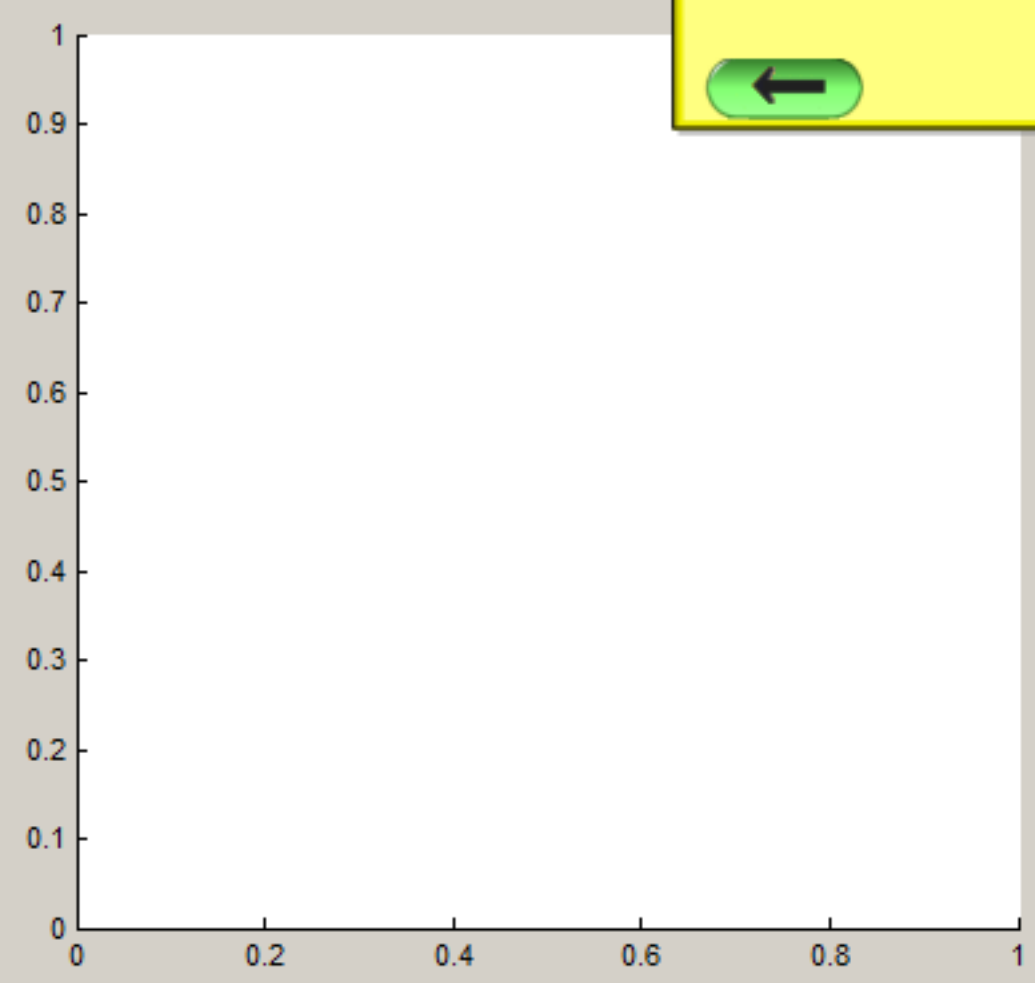
Close Panel

### Currently Selected Peaks



Browse all Peak Images

If you select more than one variable, the sum image of all selected peaks will be shown here.



Create ext Figure

Save Plot to File

## Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata\_DAN...

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

Variables to Plot

15.9971  
25.0051  
26.0054  
31.9732  
32.9727  
34.9663  
42.0052  
58.9992  
63.9539  
71.0156  
79.9478  
96.9589  
104.959  
152.948  
196.926  
228.915  
249.099

Choose display mode

Choose display mode

Data (actual counts)

Data (Autocontrast)

Add to Plot

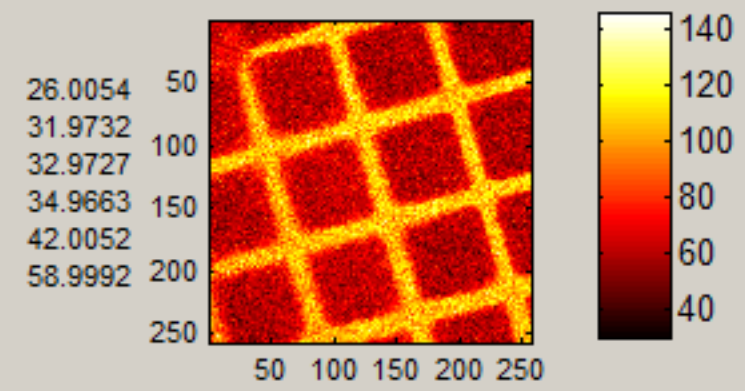
Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

Close Panel

### Currently Selected Peaks



Browse all Peak Images

1  
0.9  
0.8  
0.7  
0.6

Once the desired peak(s) are selected, choose a display mode for the peak image figure.

The user can choose between 'actual counts' or 'autocontrast'. With 'actual counts' the data is plotted as is. With 'autocontrast' the data is scaled to maximize the contrast between the lowest and highest count pixels.



Create ext Figure

Save Plot to File

### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata\_DAN...

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

Variables to Plot

15.9971  
25.0051  
26.0054  
31.9732  
32.9727  
34.9663  
42.0052  
58.9992  
63.9539  
71.0156  
79.9478  
96.9589  
104.959  
152.948  
196.926  
228.915  
249.099

Data (actual counts)

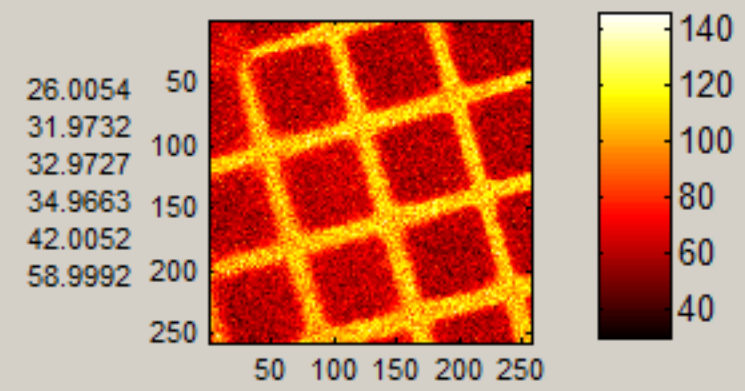
Add to Plot

Name for Combined Select

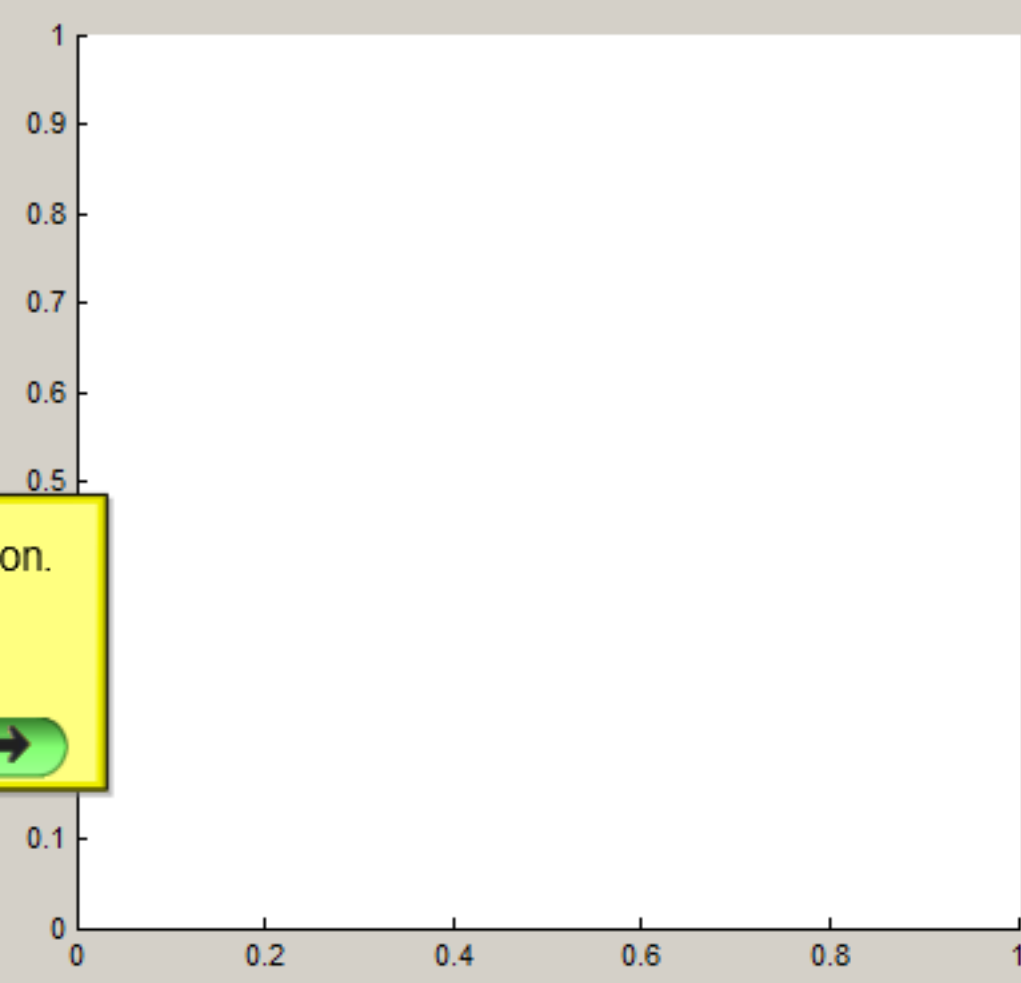
Save Combined Variable Image

Close Panel

### Currently Selected Peaks



Browse all Peak Images



Now press the 'Add to Plot' button.

Create ext Figure

Save Plot to File



### Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

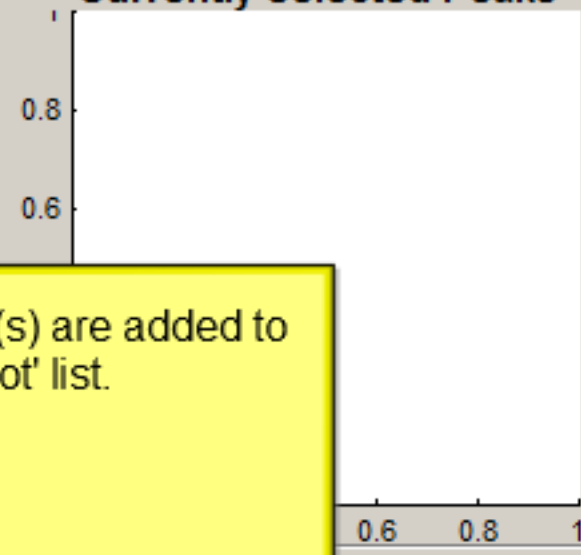
exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

#### Currently Selected Peaks



Browse all Peak Images

#### Variable List

- 15.9971
- 25.0051
- 26.0054
- 31.9732
- 32.9727
- 34.9663
- 42.0052
- 58.9992
- 63.9539
- 71.0156
- 79.9478
- 96.9589
- 104.959
- 152.948
- 196.926
- 228.915
- 249.099

#### Variables to Plot

- 26.0054
- 31.9732
- 32.9727
- 34.9663
- 42.0052
- 58.9992

The selected peak(s) are added to the 'Variables to Plot' list.

Data (actual counts)

Add to Plot

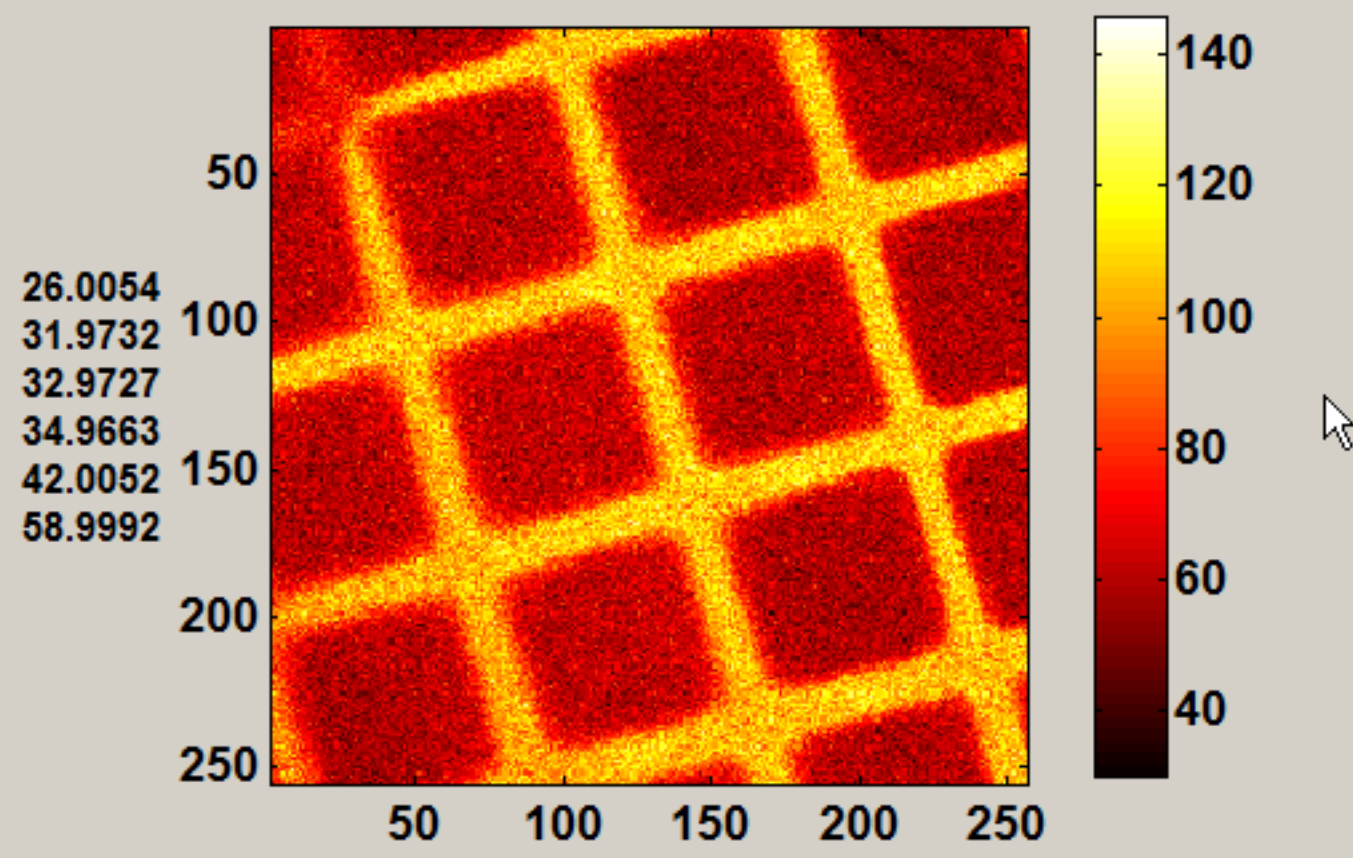
Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

Close Panel

Counts



Create ext Figure

Save Plot to File

### Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

15.9971  
25.0051  
26.0054  
31.9732  
32.9727  
34.9663  
42.0052  
58.9992  
63.9539  
71.0156  
79.9478  
96.9589  
104.959  
152.948  
196.926  
228.915  
249.099

Variables to Plot

26.0054  
31.9732  
32.9727  
34.9663  
42.0052  
58.9992

Data (actual counts)

Add to Plot

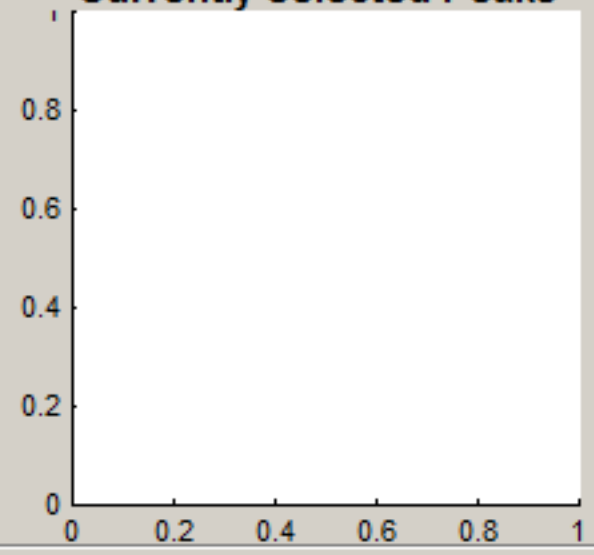
Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

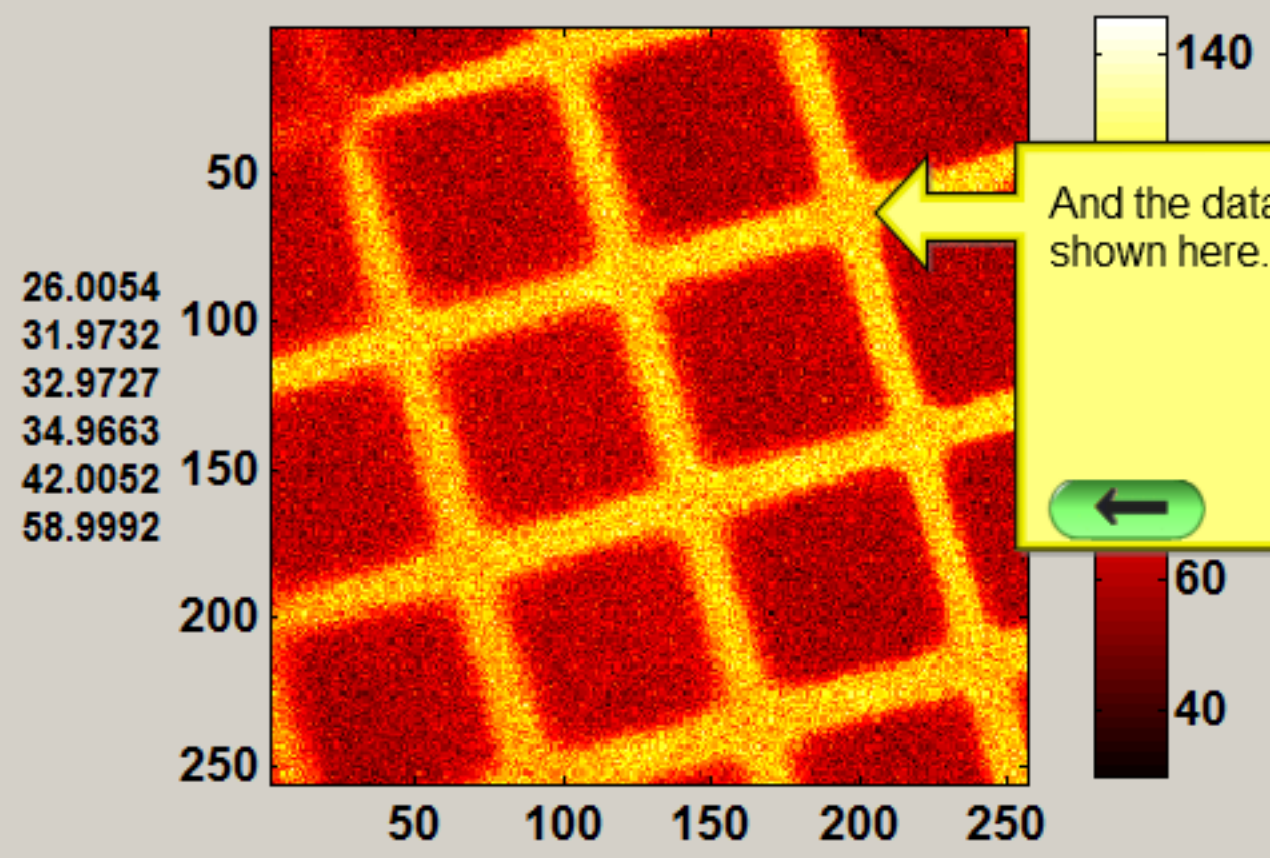
Close Panel

#### Currently Selected Peaks



Browse all Peak Images

Counts



Create ext Figure

Save Plot to File

### Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

15.9971  
25.0051  
26.0054  
31.9732  
32.9727  
34.9663  
42.0052  
58.9992  
63.9539  
71.0156  
79.9478  
96.9589  
104.959  
152.948  
196.926  
228.915  
249.099

Variables to Plot

26.0054  
31.9732  
32.9727  
34.9663  
42.0052  
58.9992

Data (actual counts)

Add to Plot

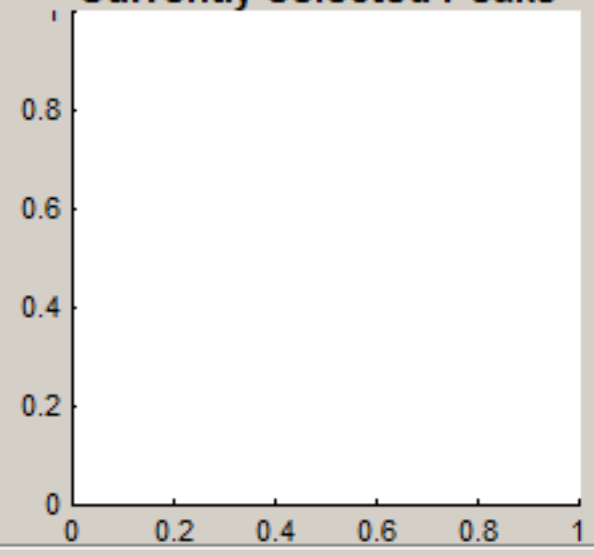
Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

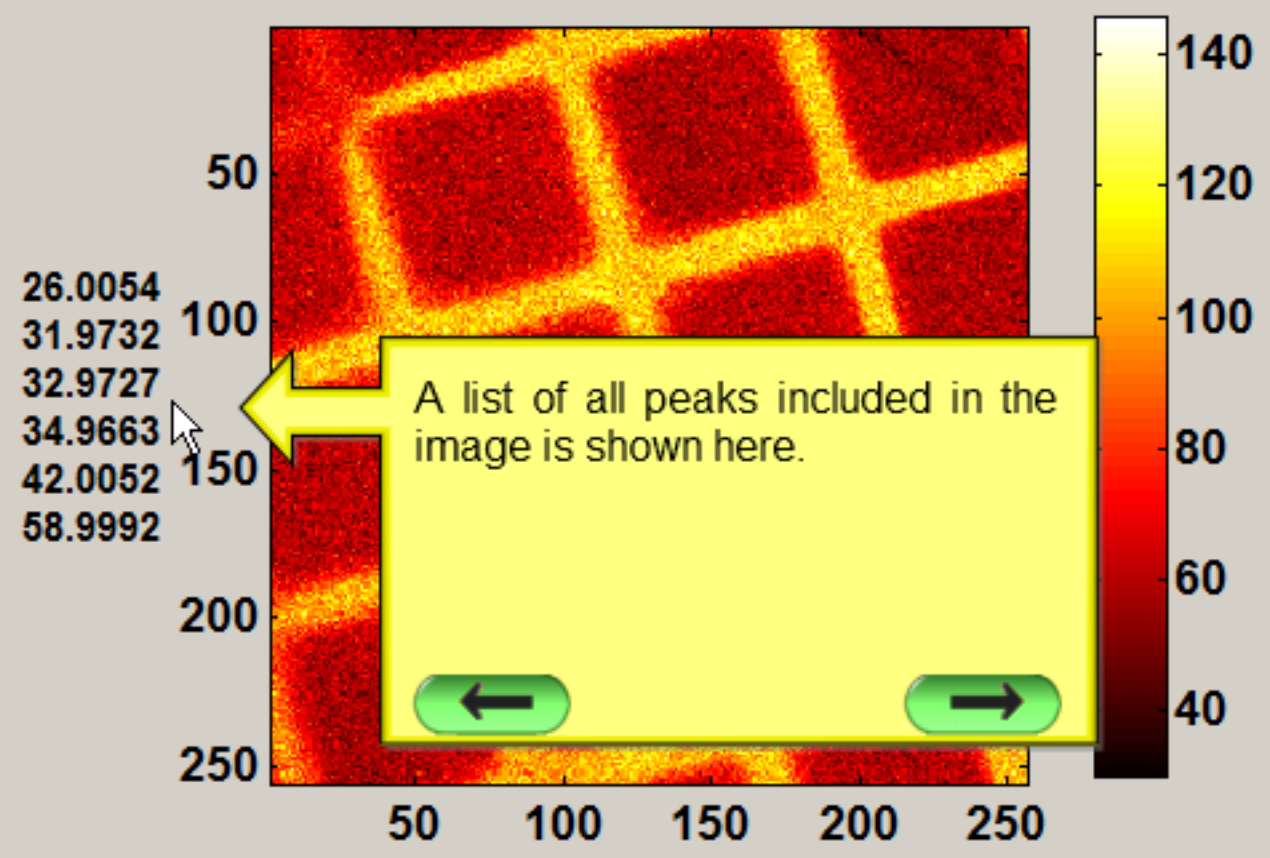
Close Panel

#### Currently Selected Peaks



Browse all Peak Images

Counts



Create ext Figure

Save Plot to File



# Data Selection Panel

Name of Image Matrix      Name of Variable Matrix

imagedata\_DAN...

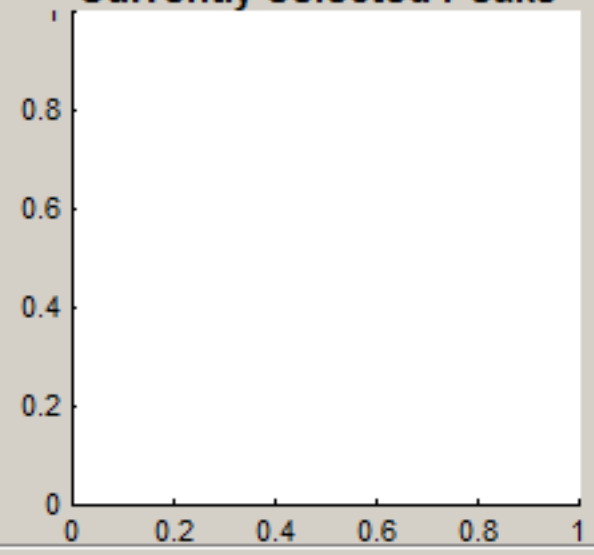
exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

## Currently Selected Peaks



Browse all Peak Images

### Variable List

- 15.9971
- 25.0051
- 26.0054
- 31.9732
- 32.9727
- 34.9663
- 42.0052
- 58.9992
- 63.9539
- 71.0156
- 79.9478
- 96.9589
- 104.959
- 152.948
- 196.926
- 228.915
- 249.099

### Variables to Plot

- 26.0054
- 31.9732
- 32.9727
- 34.9663
- 42.0052
- 58.9992

Data (actual counts)

Add to Plot

Reset Plot

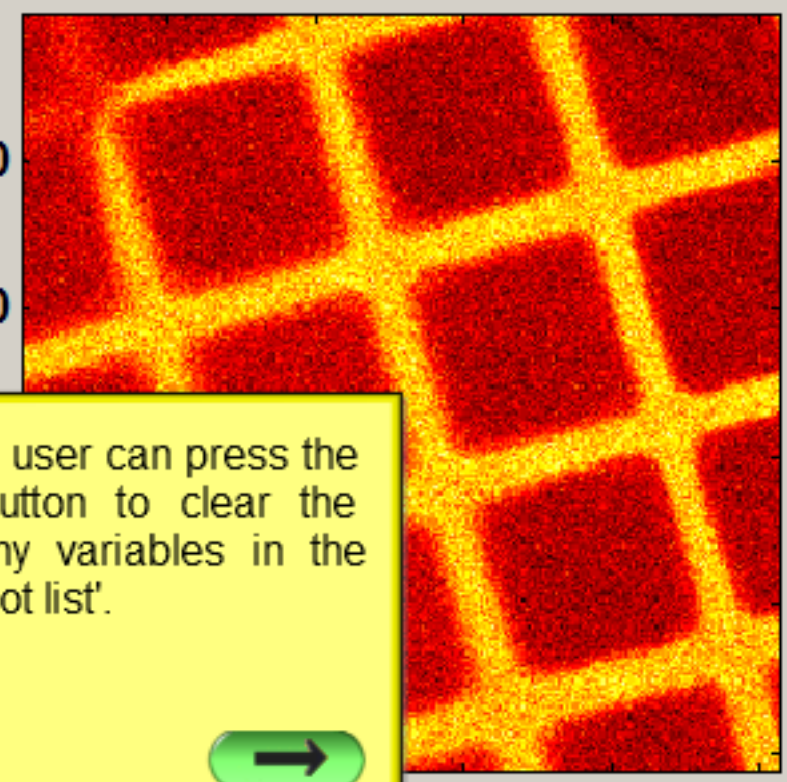
At any time the user can press the 'Reset Plot' button to clear the figures and any variables in the 'Variables to Plot list'.

Name for Combined Selected Variable Image

Save Combined Variable Image

Close Panel

Counts



Create ext Figure

Save Plot to File

### Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

15.9971  
25.0051  
26.0054  
31.9732  
32.9727  
34.9663  
42.0052  
58.9992  
63.9539  
71.0156  
79.9478  
96.9589  
104.959  
152.948  
196.926  
228.915  
249.099

Variables to Plot

Data (actual counts)

Add to Plot

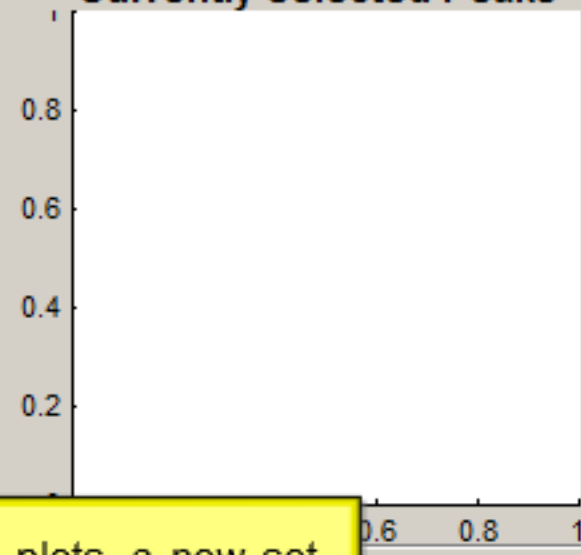
Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

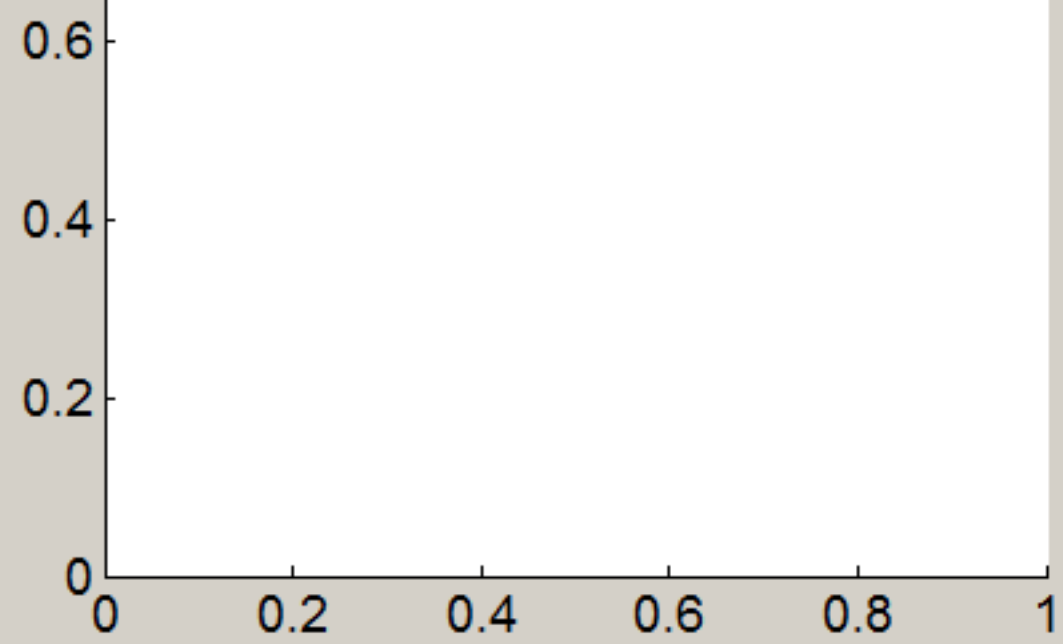
Close Panel

Currently Selected Peaks



Browse all Peak Images

After clearing the plots, a new set of peaks can be selected as before.



Create ext Figure

Save Plot to File

Data Selection Panel

Name of Image Matrix
Name of Variable Matrix

imagedata\_DAN...

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**  
Variables **exactmass\_DAN01**

Variable List
Variables to Plot

15.9971

25.0051

26.0054

31.9732

32.9727

34.9663

42.0052

58.9992

63.9539

71.0156

79.9478

96.9589

104.959

152.948

196.926

228.915

249.099

58.9992

63.9539

71.0156

79.9478

Data (actual counts)

Add to Plot

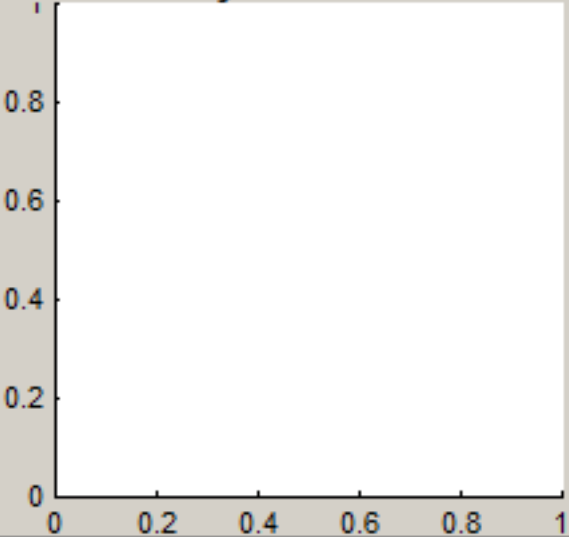
Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

Close Panel

Currently Selected Peaks

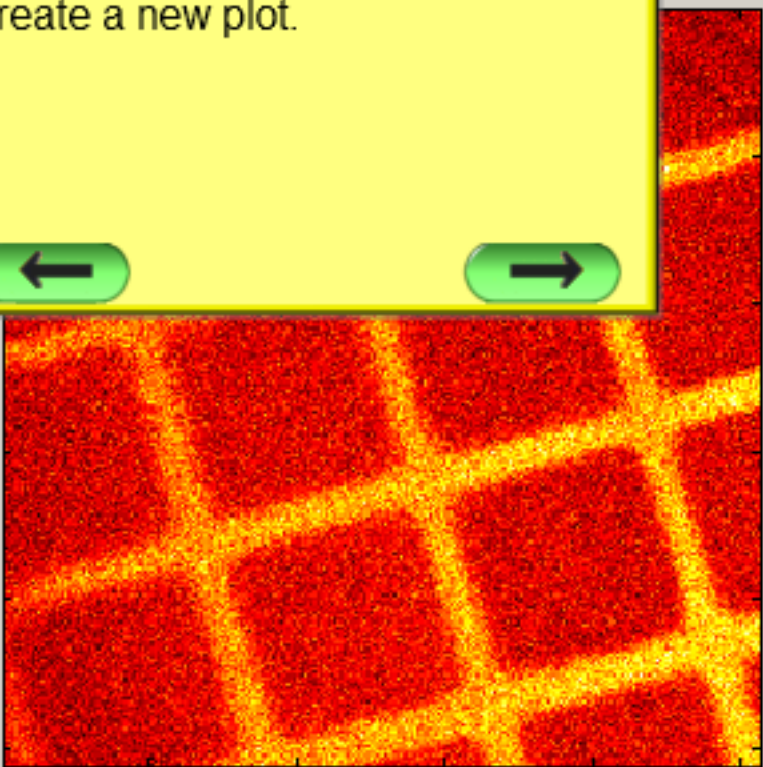


Browse all Peak Images

Let's select some peaks and create a new plot.

58.9992  
63.9539  
71.0156  
79.9478

1  
150  
200  
250



Create ext Figure

Save Plot to File



## Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata\_DAN...

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

Variables to Plot

15.9971  
25.0051  
26.0054  
31.9732  
32.9727  
34.9663  
42.0052  
58.9992  
63.9539  
71.0156  
79.9478  
96.9589  
104.959  
152.948  
196.926  
228.915  
249.099

58.9992  
63.9539  
71.0156  
79.9478

Data (actual counts)

Add to Plot

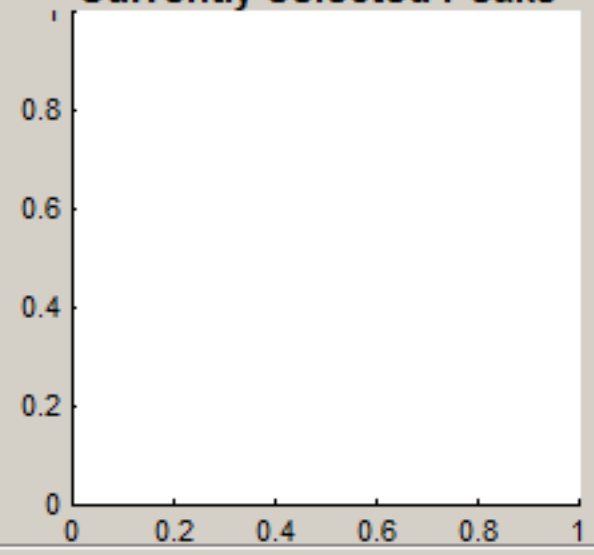
Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

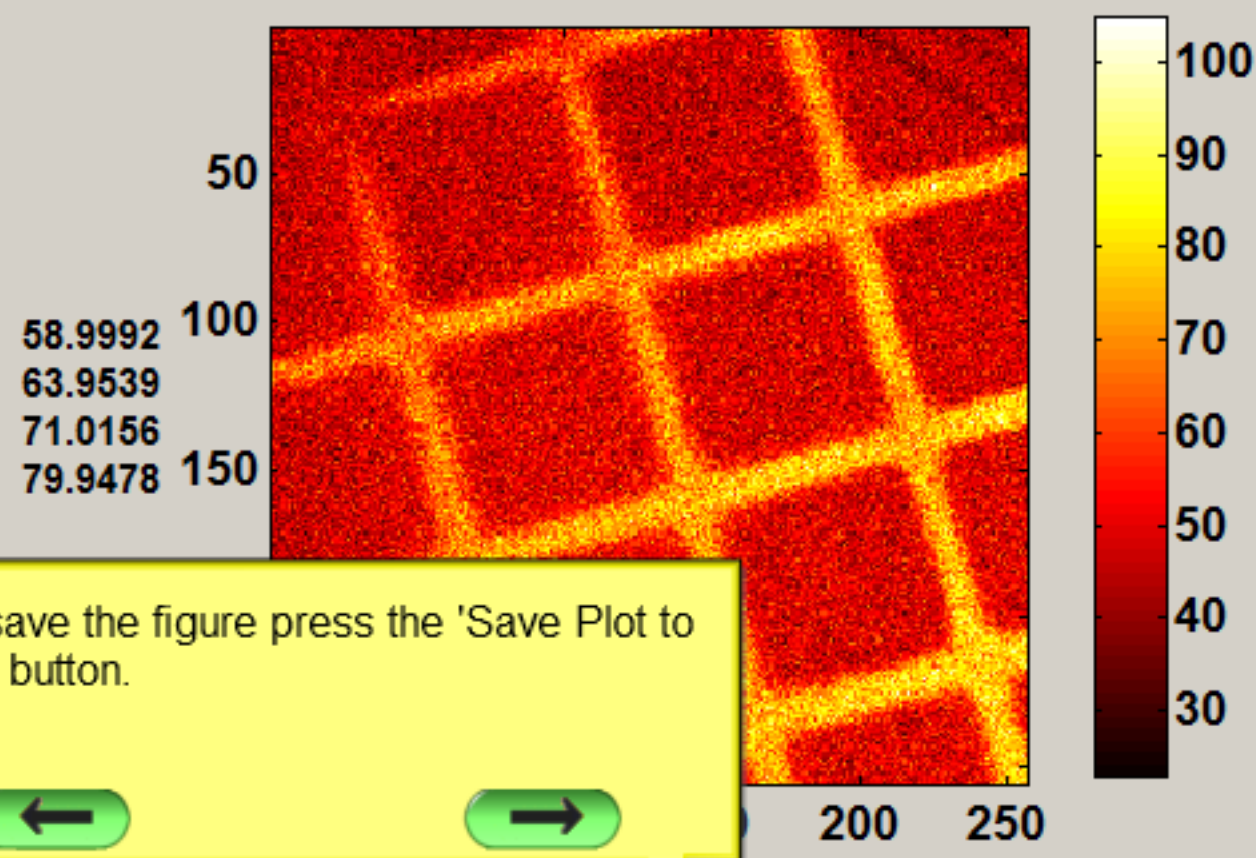
Close Panel

Currently Selected Peaks



Browse all Peak Images

Counts



To save the figure press the 'Save Plot to File' button.



Create ext Figure

Save Plot to File

Save picture as

Save in:

MATLAB

Recent Places

Desktop

Libraries

Computer

Network

Name	Date	Type	Size	Tags
New folder	2/6/2013 10:05 AM	File folder		
slices	2/6/2013 9:57 AM	File folder		
spectragui	2/6/2013 9:57 AM	File folder		
zcorrectorgui	2/6/2013 9:57 AM	File folder		
Nick	2/6/2013 9:55 AM	File folder		
PEG_PS_ClassificationImage_08.jpg	7/2/2013 2:51 PM	IrfanView JPG File	39 KB	
PEG_PS_ClassificationImage_06.jpg	7/2/2013 2:51 PM	IrfanView JPG File	40 KB	
PEG_PS_ClassificationImage_07.jpg	7/2/2013 2:49 PM	IrfanView JPG File	38 KB	
184_984.jpg	6/28/2013 4:08 PM	IrfanView JPG File	222 KB	
18_9986.jpg	6/28/2013 4:08 PM	IrfanView JPG File	213 KB	
41_0049.jpg	6/28/2013 4:08 PM	IrfanView JPG File	203 KB	
43_0217.jpg	6/28/2013 4:08 PM	IrfanView JPG File	187 KB	
71_0171.jpg	6/28/2013 4:08 PM	IrfanView JPG File	182 KB	
OverlayXYSnapShot.jpg	6/27/2013 9:50 AM	IrfanView JPG File	74 KB	
default.jpg	6/19/2013 1:58 PM	IrfanView JPG File	162 KB	
totalHSRDPNewSpot3.jpg	4/3/2013 2:03 PM	IrfanView JPG File	16 KB	

File name:

PeakImage

Save as type:

jpeg (\*.jpg)

Save

Cancel

63.9539

71.0156

79.9478

96.9589

104.959

152.948

196.926

228.915

249.099

Data (actual counts)

Add to Plot

Reset Plot

Name for Combined Selected Variable Image

Save Combined Variable Image

Close Panel

58.9992

63.9539

71.0156

79.9478

50

100

150

200

250

80

70

60

50

40

30

50

100

150

200

250

Choose a location to save the file, give it a name and press the 'Save' button.

←

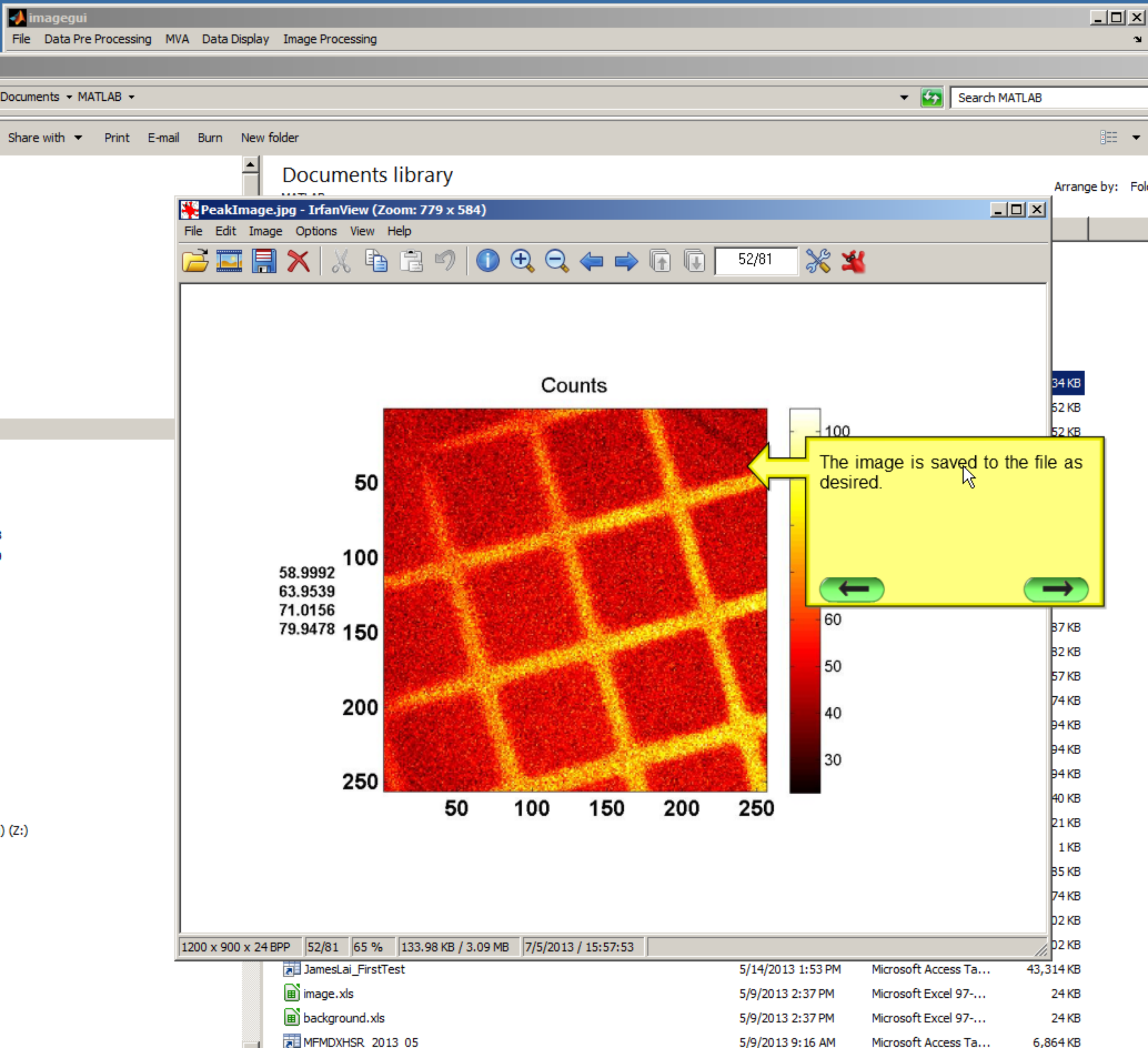
→

Create ext Figure

Save Plot to File

ak Images





# Data Selection Panel

Name of Image Matrix      Name of Variable Matrix

imagedata\_DAN...

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

Variables to Plot

15.9971  
25.0051  
26.0054  
31.9732  
32.9727  
34.9663  
42.0052  
58.9992  
63.9539  
71.0156  
79.9478  
96.9589  
104.959  
152.948  
196.926  
228.915  
249.099

58.9992  
63.9539  
71.0156  
79.9478

Data (actual counts)

Add to Plot

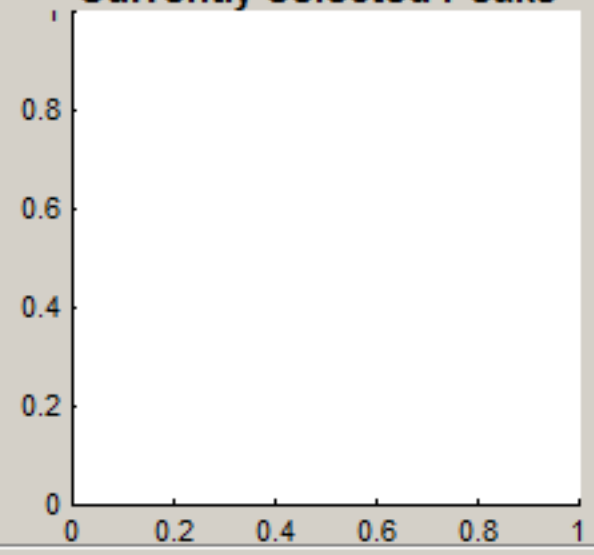
Reset Plot

Name for Combined Selected Variables Image

Save Combined Variables

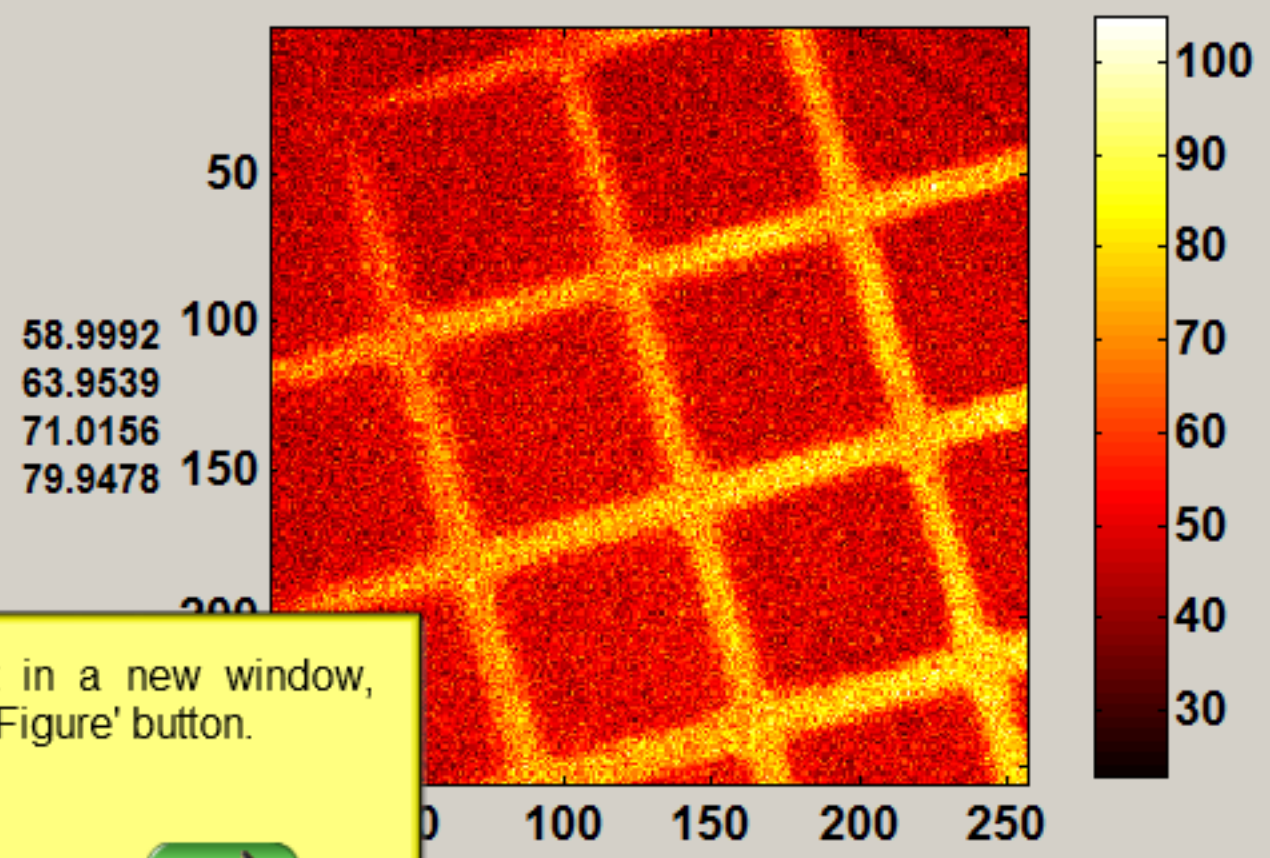
Close Panel

Currently Selected Peaks



Browse all Peak Images

Counts



To recreate the plot in a new window, press the 'Create ext Figure' button.



Create ext Figure

Save Plot to File



# Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Select

Image: imagedata

Variables exactmass

Variable List

- 15.9971
- 25.0051
- 26.0054
- 31.9732
- 32.9727
- 34.9663
- 42.0052
- 58.9992
- 63.9539
- 71.0156
- 79.9478
- 96.9589
- 104.959
- 152.948
- 196.926
- 228.915
- 249.099

Variable List

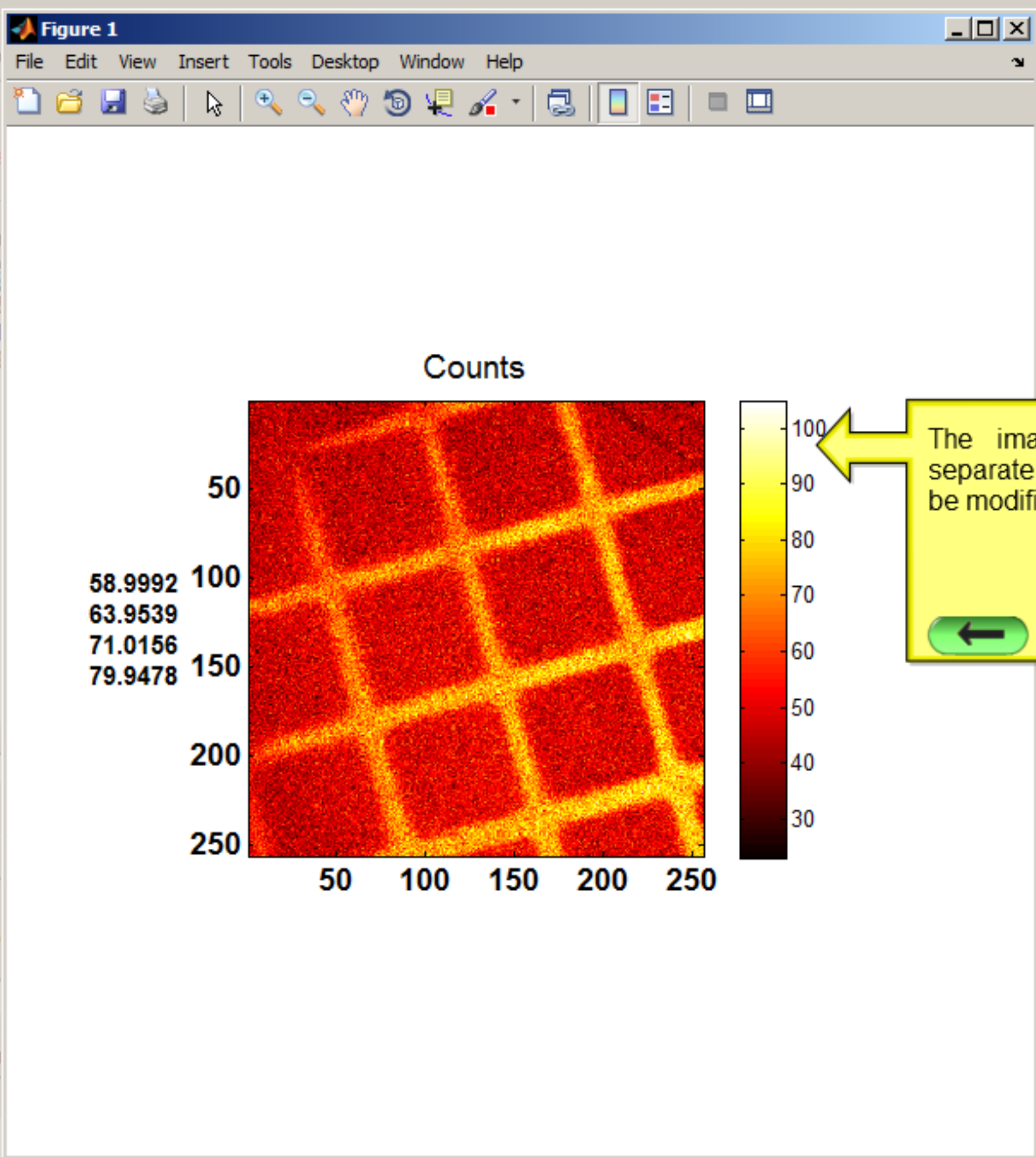
- 58.9992
- 63.9539
- 71.0156
- 79.9478

Data (actual counts)

Add to Plot

Name for Combined Selection

Save Combined Variables



Browse all Peak Images

The image is recreated in a separate window. This figure can be modified and saved as desired.



Create ext Figure

Save Plot to File

### Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

15.9971  
25.0051  
26.0054  
31.9732  
32.9727  
34.9663  
42.0052  
58.9992  
63.9539  
71.0156  
79.9478  
96.9589  
104.959  
152.948  
196.926  
228.915  
249.099

Variables to Plot

58.9992  
63.9539  
71.0156  
79.9478

Data (actual counts)

Add to Plot

Reset Plot

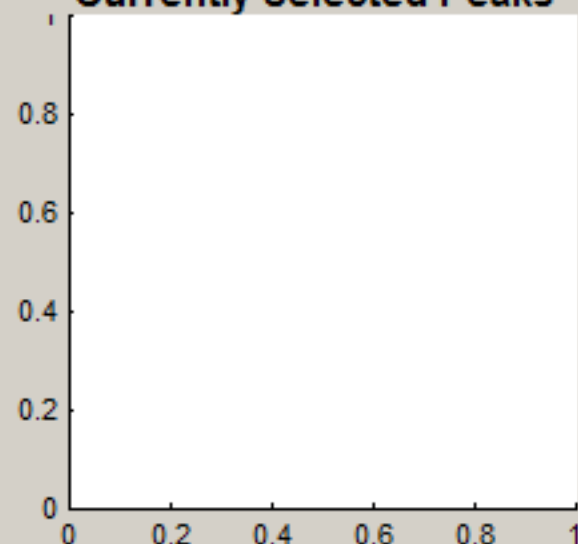
Name for Combined Selected Variable Image

Lines

Save Combined Variable Image

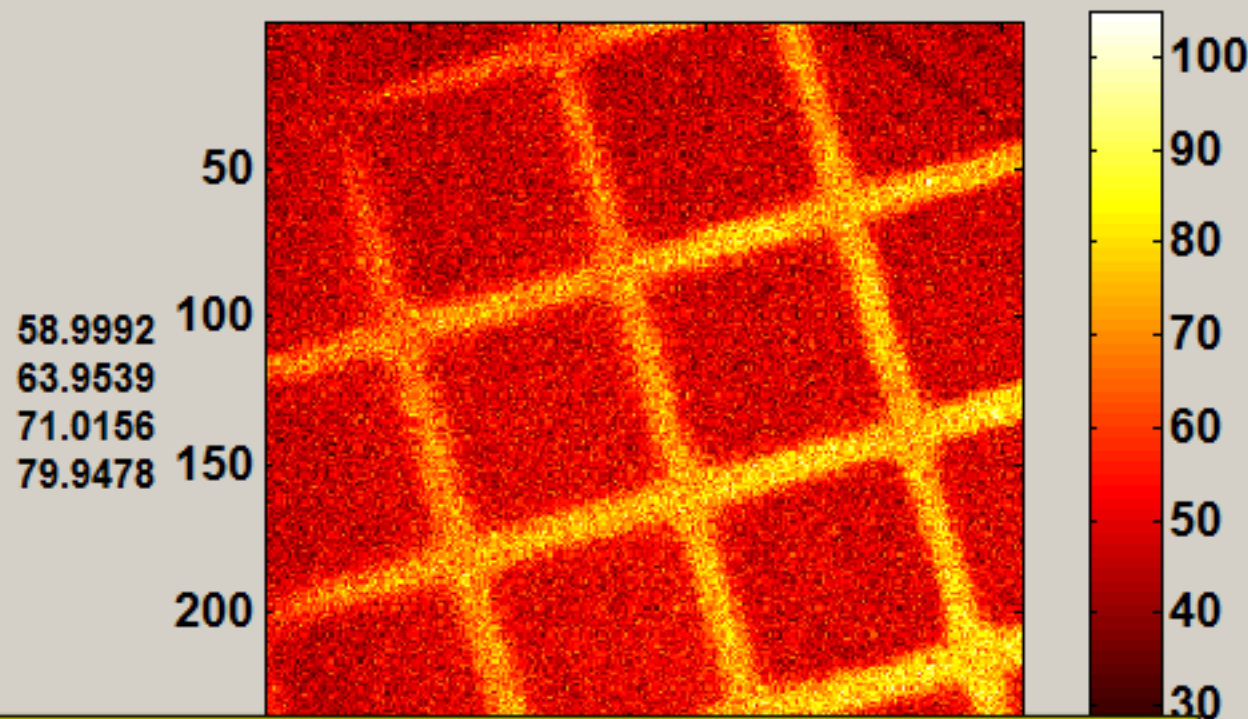
Close Panel

#### Currently Selected Peaks



Browse all Peak Images

#### Counts



The image can also be saved to the matlab workspace to be used in an image overlay. This can be done for individual peaks or for any combination of peaks.

Give the peak image a name and press the 'Save Combined Variable Image' button.



### Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

31.9732  
32.9727  
34.9663  
42.0052  
58.9992  
63.9539  
71.0156  
79.9478  
96.9589  
104.959  
152.948  
196.926  
228.915  
249.099  
498.826  
590.814  
622.819

Variables to Plot

196.926

Data (actual counts)

Add to Plot

Reset Plot

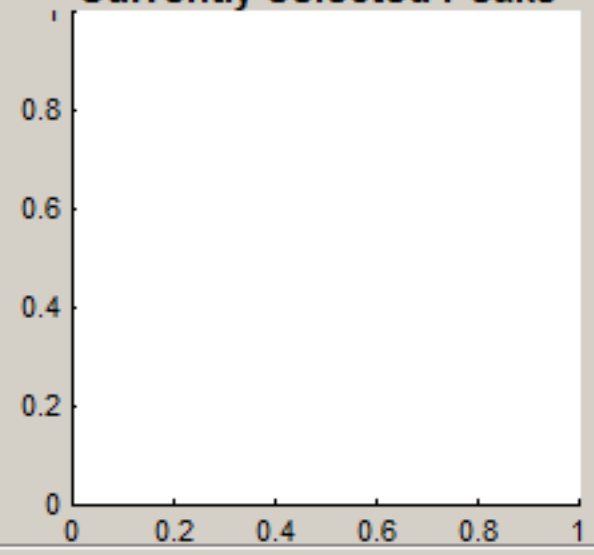
Name for Combined Selected Variable Image

squares

Save Combined Variable Image

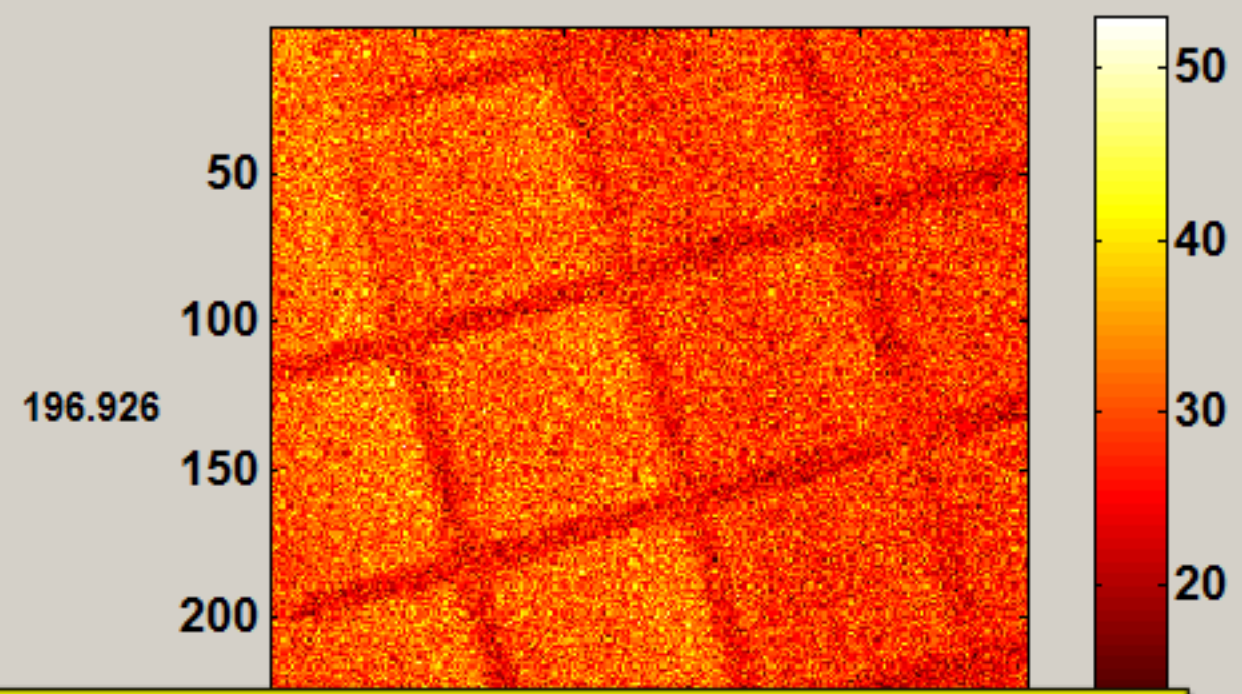
Close Panel

#### Currently Selected Peaks



Browse all Peak Images

#### Counts



Lets create another image that shows opposite contrast to the first image we saved. We'll call this one 'squares' and save it as before.

Create ext Figure

Save Plot to File

### Data Selection Panel

Name of Image Matrix

imagedata\_DAN...

Name of Variable Matrix

exactmass\_DAN01...

Load Selected Data

Image: **imagedata\_DAN01**

Variables **exactmass\_DAN01**

Variable List

31.9732  
32.9727  
34.9663  
42.0052  
58.9992  
63.9539  
71.0156  
79.9478  
96.9589  
104.959  
152.948  
196.926  
228.915  
249.099  
498.826  
590.814  
622.819

Variables to Plot

196.926

Data (actual counts)

Add to Plot

Reset Plot

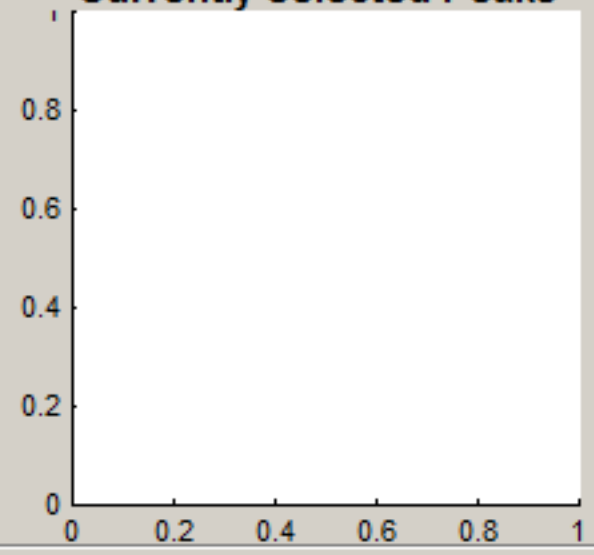
Name for Combined Selected Variable Image

squares

Save Combined Variable Image

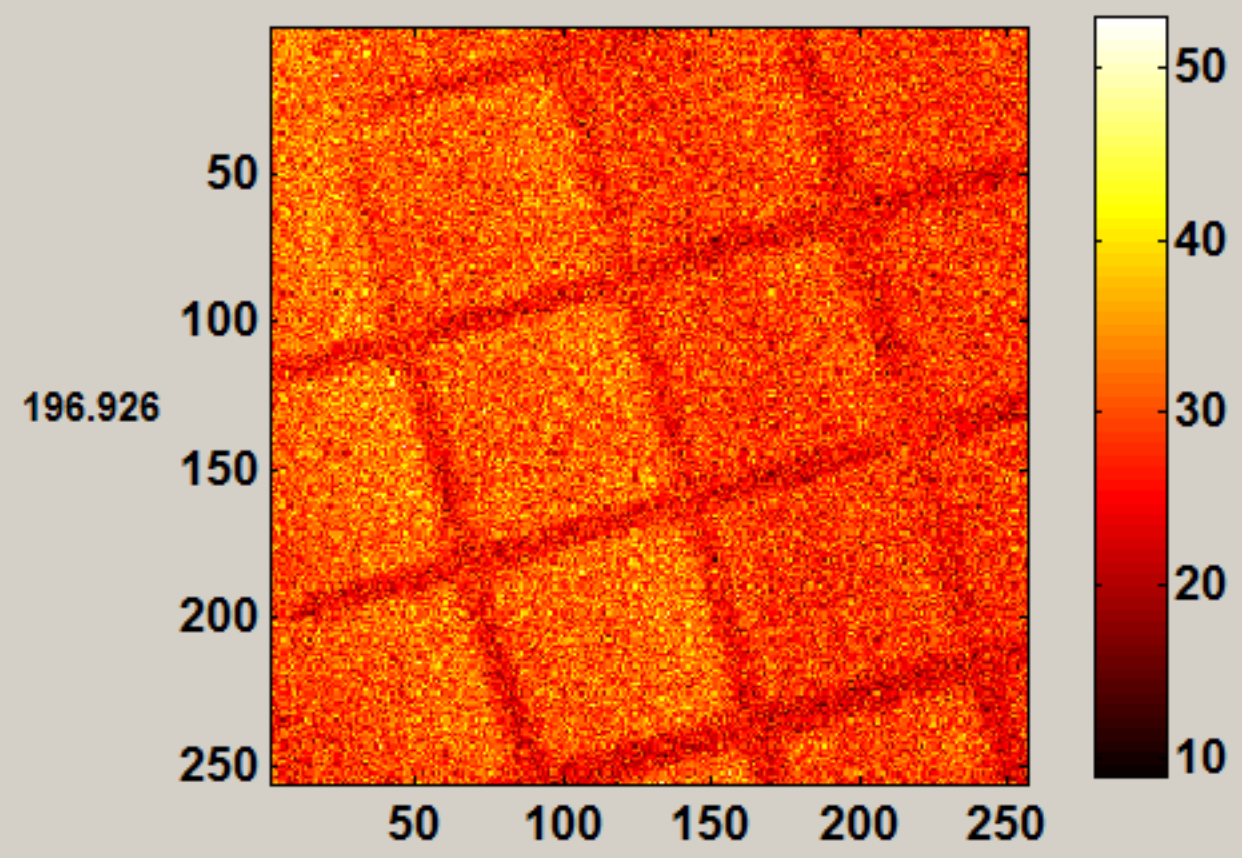
Close Panel

Currently Selected Peaks



Browse all Peak Images

Counts



Press the 'Close Panel' button to close the Image Data Plotting panel.

Save Plot to File

### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata\_DAN...

exactmass\_DAN01...

RED

GREEN

BLUE

Choose A Peak...

Choose A Peak...

Choose A Peak...

1  
0.8  
0.6  
0.4  
0.2  
0

1  
0.8  
0.6  
0.4  
0.2  
0

1  
0.8  
0.6  
0.4  
0.2  
0

31.97319  
32.97265  
34.9663  
42.00519  
58.99923  
63.95393  
71.01558  
79.9478  
96.95888  
104.9591  
152.9483  
196.926  
228.9151  
249.0989  
498.8262  
590.8137  
622.8191  
DAN01\_1

Lines

squares

Create

Create

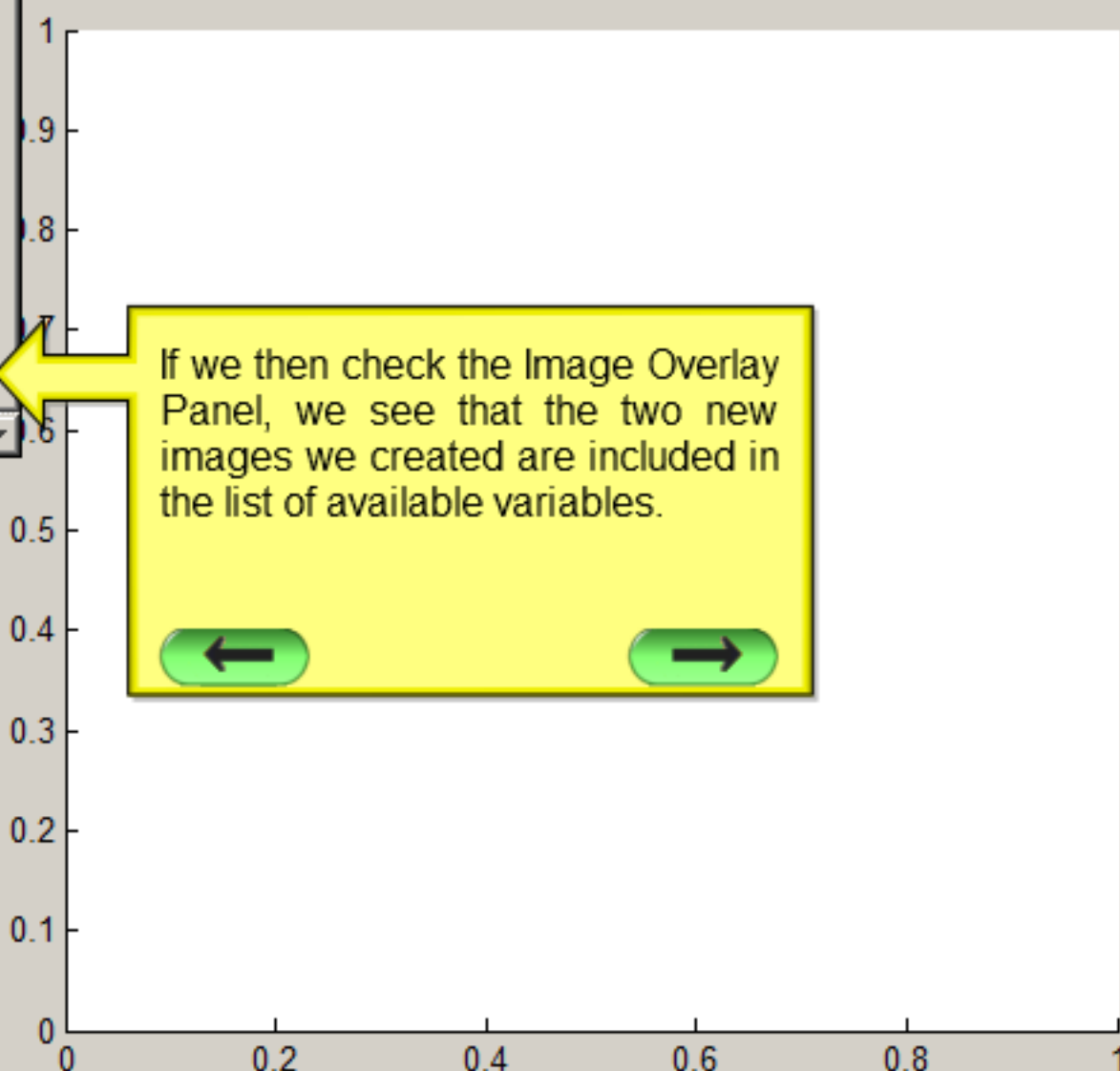
Create R B

Create G B

Save Overlay

Make Ext

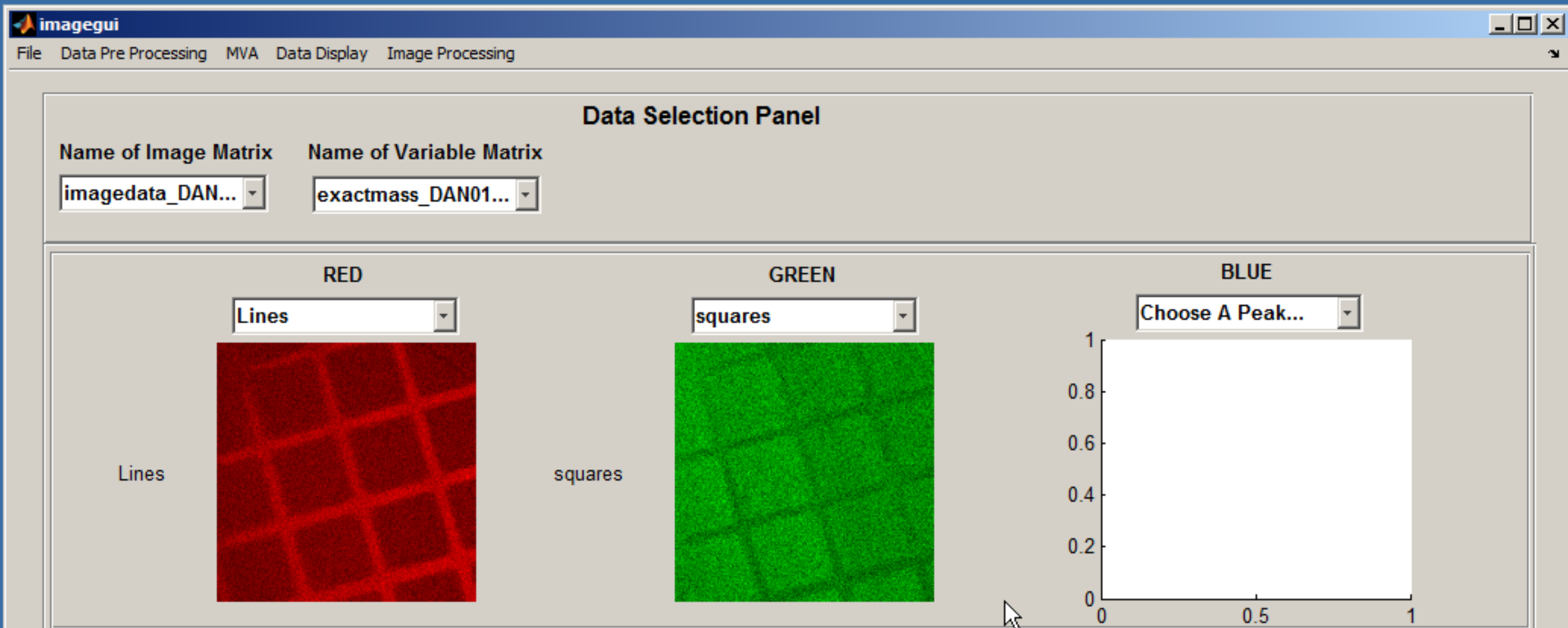
Close Panel



If we then check the Image Overlay Panel, we see that the two new images we created are included in the list of available variables.







Create R G B

Create R G

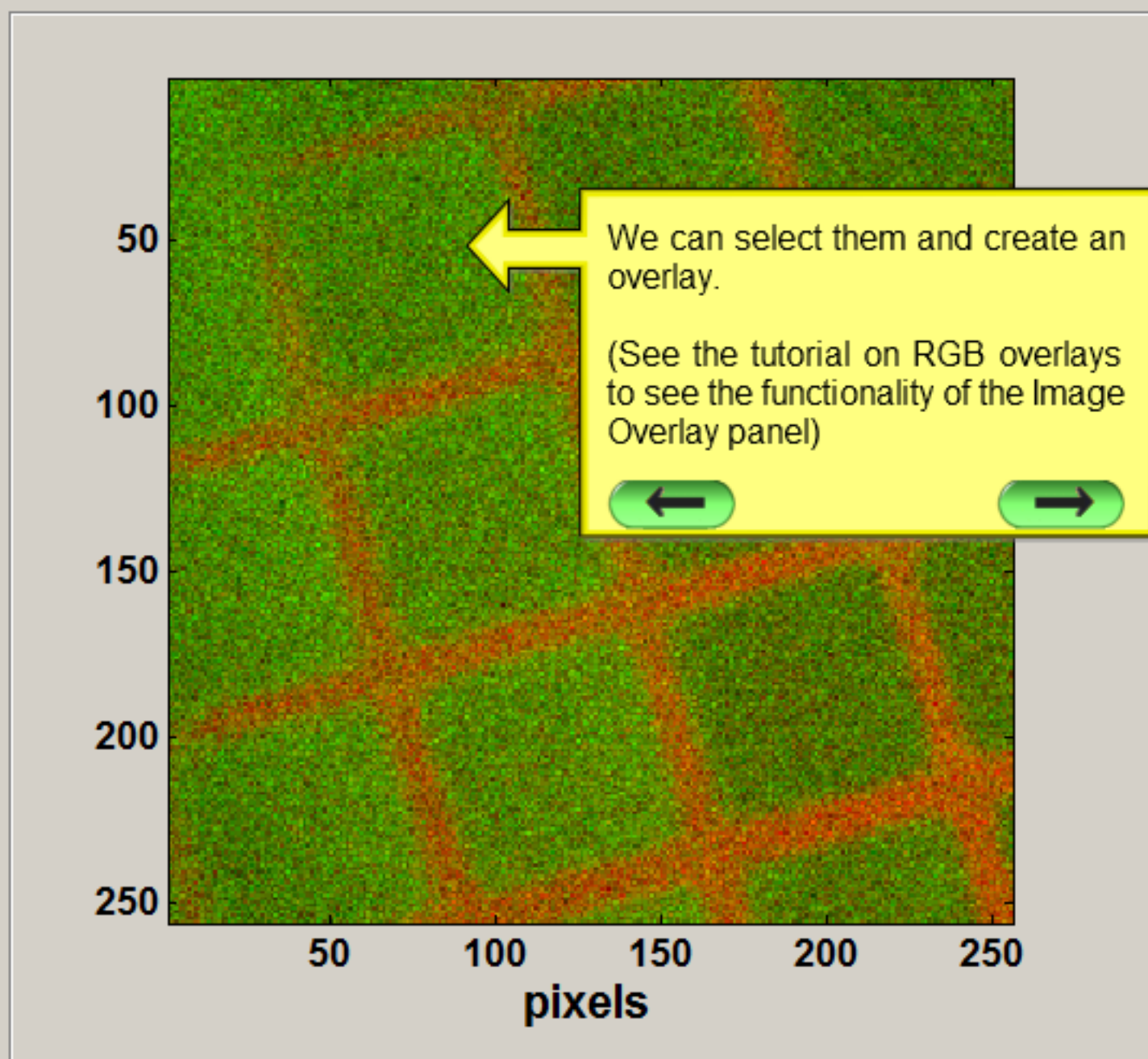
Create R B

Create G B

Save Overlay

Make Ext

Close Panel



### Scalebar Maker

Show Image Size

Image size (pixels)  
X   
Y

Image size (microns)  
X   
Y

Scalebar location  
Choose an option

Scalebar color  
Choose a color

Add Scale Bar

Close panel

### Data Selection Panel

Name of Image Matrix

imagedata\_dan01

Name of Variable Matrix

exactmass\_dan01

That ends this tutorial. Press the button on the left to go back to the previous step. Press the button on the right to start the tutorial over.

