

### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

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

Name of Variable Matrix



This tutorial will cover how to import data into the imagegui.

Data can be imported from the workspace or from iontof .bif and .bif6 files.



Import Data  
Normalize Data  
Crop Image  
Filter Image  
Select Data  
le Matrix  
Select Variables

To import existing data from the workspace choose 'Data Pre Processing' -> 'Import Data' -> 'Import From Workspace'

← →

### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

Press the 'Get Variables' button to import a list of existing variables from the Matlab workspace. This will show a list of all variables in the active workspace even if they are not applicable to the imagegui,

←→

MVA Data

- Add to PCA Scores List
- Add to PCA Loadings List
- Add to PCA Variance List
- Add to MAF Scores List
- Add to MAF Loadings List
- Add to MAF Variance List

Close Panel

### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF\_mafloads
- MAF\_mafscors
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- compositeimage
- exactmass\_dan01
- headerinfo\_dan01
- imagedata\_dan01
- one
- sumofselected\_dan01
- three
- totalcounts\_dan01
- two

#### Raw Data

- Add to Image List
- Add to Variable List
- Add to Image Overlay List

#### MVA Data

- Add to PCA Scores List
- Add to PCA Loadings List

Select a variable and then press the corresponding button on the right of the panel.

Here we select an image matrix so we will add it to the image list.

← →

Close Panel

### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

Select Data

Select Variables

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF\_mafloads
- MAF\_mafscores
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- PoissonScaledMC
- compositeimage
- exactmass\_DAN01
- headerinfo\_DAN01
- imagedata\_DAN01
- one
- sumofselected\_DAN01
- three
- totalcounts\_DAN01
- two

#### Data

Add to Image List

Add to Variable List

Add to Image Overlay List

#### MVA Data

Add to PCA Scores List

Add to PCA Loadings List

Add to PCA Variance List

Add to MAF Scores List

Add to MAF Loadings List

Add to MAF Variance List

Close Panel

After selecting the variable name that contains the image data, press the 'Add to Image List' button to add the image to the image list.



### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

Select Data

Select Variables

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

**imagedetailsgui**

Please fill in the information below

Name of Total counts matrix  
totalcounts\_DAN01

Name of sum of selected matrix  
sumofselected\_DAN01

I do not need Total or Sum Images

Close

**Data**

Add to Image List

Add to Variable List

Add to Image Overlay List

When you add an image it will ask you to select the 'Total counts' and 'Sum of selected peaks' images that correspond with the image you are loading.

You only need to do this if you are going to use them for normalization later.

If you do not wish to load these matrices, simply check the 'I do not need Total or Sum Images' box.

← →

one  
sumofselected\_DAN01  
three  
totalcounts\_DAN01  
two

Close Panel

### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

Select Data

Select Variables

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

imagedetailsgui

Please fill in the information below

Name of Total counts matrix

totalcounts\_DAN01

Name of sum of selected matrix

sumofselected\_DAN01

I do not need Total or Sum Images

Close

#### Data

Add to Image List

Add to Variable List

Add to Image Overlay List

#### MVA Data

Add to PCA Scores List

Add to MAF Loadings List

Add to MAF Variance List

Close Panel

one  
sumofselected\_DAN01  
three  
totalcounts\_DAN01  
two

After making your selections, press the 'Close' button to close the pop-up window.





### Data Selection Panel

Name of Image Matrix:

Name of Variable Matrix:

#### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF\_mafloads
- MAF\_mafscors
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- compositeimage
- exactmass\_dan01
- headerinfo\_dan01
- imagedata\_dan01
- one
- sumofselected\_dan01
- three
- totalcounts\_dan01
- two

#### Raw Data

- Add to Image List
- Add to Variable List
- Add to Image Overlay List

#### MVA Data

- Add to PCA Scores List
- Add to PCA Loadings List
- Add to PCA Variance List
- Add to MAF Scores List
- Add to MAF Loadings List
- Add to MAF Variance List

Close Panel

NOTE: A variable list has to be imported before you can add variables to the image overlay list. This is because the names of images for overlay are appended to the variable list in the image overlay list.



### Data Selection Panel

Name of Image Matrix:

Name of Variable Matrix:

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF\_mafloads
- MAF\_mafscors
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- compositeimage
- exactmass\_dan01**
- headerinfo\_dan01
- imagedata\_dan01
- one
- sumofselected\_dan01
- three
- totalcounts\_dan01
- two

#### Raw Data

- Add to Image List
- Add to Variable List
- Add to Image Overlay List

#### MVA Data

- Add to PCA Scores List
- Add to MAF Loadings List
- Add to MAF Variance List

So, let's import a variable list by selecting it from the available variables.



Close Panel

### Data Selection Panel

Name of Image Matrix:

Name of Variable Matrix:

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF\_mafloads
- MAF\_mafscors
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- compositeimage
- exactmass\_dan01
- headerinfo\_dan01
- imagedata\_dan01
- one
- sumofselected\_dan01
- three
- totalcounts\_dan01
- two

#### Raw Data

- Add to Image List
- Add to Variable List
- Add to Image Overlay List

#### MVA Data

- Add to PCA Scores List
- Add to PCA Loadings List
- Add to PCA Variance List
- Add to MAF Scores List
- Add to MAF Loadings List
- Add to MAF Variance List

Close Panel

Press the 'Add to Variable List' button to add it to the Variable list.

← →

### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

Select Data

Select Variables

- Select Variables
- exactmass\_dan01

Choose the imported list from the 'Variable Matrix' drop down menu.

← →

### Import Data from workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

---

#### Raw Data

- Add to Image List
- Add to Variable List
- Add to Image Overlay List

---

#### MVA Data

- Add to PCA Scores List
- Add to PCA Loadings List
- Add to PCA Variance List
- Add to MAF Scores List
- Add to MAF Loadings List
- Add to MAF Variance List

- MAF\_mafloads
- MAF\_mafscors
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- compositeimage
- exactmass\_dan01
- headerinfo\_dan01
- imagedata\_dan01
- one
- sumofselected\_dan01
- three
- totalcounts\_dan01
- two

Close Panel

### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF\_mafloads
- MAF\_mafscors
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- compositeimage
- exactmass\_dan01
- headerinfo\_dan01
- imagedata\_dan01
- one
- sumofselected\_dan01
- three
- totalcounts\_dan01
- two

**Raw Data**

Add to Image List

Add to Variable List

Add to Image Overlay List

**MVA Data**

Add to PCA Scores List

Add to PCA Loadings List

Add to PCA Variance List

Add to MAF Scores List

Add to MAF Loadings List

Add to MAF Variance List

Close Panel

The 'Add to Image Overlay List' button becomes active.

← →

### Data Selection Panel

Name of Image Matrix:

Name of Variable Matrix:

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF\_mafloads
- MAF\_mafscors
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- compositeimage
- exactmass\_dan01
- headerinfo\_dan01
- imagedata\_dan01
- one**
- sumofselected\_dan01
- three
- totalcounts\_dan01
- two

#### Raw Data

- Add to Image List
- Add to Variable List
- Add to Image Overlay List

#### MVA Data

- Add to PCA Scores List
- Add to PCA Loadings List

We can now select an image to add to the overlay list.  
Valid images must be unfolded, n x m images.

← →

Close Panel

### Data Selection Panel

Name of Image Matrix:

Name of Variable Matrix:

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF\_mafloads
- MAF\_mafscors
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- compositeimage
- exactmass\_dan01
- headerinfo\_dan01
- imagedata\_dan01
- one
- sumofselected\_dan01
- three
- totalcounts\_dan01
- two

#### Raw Data

- Add to Image List
- Add to Variable List
- Add to Image Overlay List

#### MVA Data

- Add to PCA Scores List
- Add to PCA Loadings List
- Add to PCA Variance List
- Add to MAF Scores List
- Add to MAF Loadings List
- Add to MAF Variance List

Close Panel

Press the 'Add to Image Overlay List' button to add the image to the list.

← →

### Data Selection Panel

Name of Image Matrix:  Name of Variable Matrix:

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF\_mafloads
- MAF\_mafscors
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- compositeimage
- exactmass\_dan01
- headerinfo\_dan01
- imagedata\_dan01
- one
- sumofselected\_dan01
- three
- totalcounts\_dan01
- two

#### Raw Data

- Add to Image List
- Add to Variable List
- Add to Image Overlay List

#### MVA Data

- Add to PCA Scores List
- Add to PCA Loadings List
- Add to PCA Variance List
- Add to MAF Scores List
- Add to MAF Loadings List
- Add to MAF Variance List

Close Panel

You can continue to select variables and add them to their respective list until all of the desired data is loaded.





### Data Selection Panel

Name of Image Matrix:  Name of Variable Matrix:

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF\_mafloads
- MAF\_mafscors
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- compositeimage
- exactmass\_dan01
- headerinfo\_dan01
- imagedata\_dan01
- one
- sumofselected\_dan01
- three
- totalcounts\_dan01
- two

#### Raw Data

- Add to Image List
- Add to Variable List
- Add to Image Overlay List

#### MVA Data

- Add to PCA Scores List
- Add to PCA Loadings List
- Add to PCA Variance List
- Add to MAF Scores List
- Add to MAF Loadings List
- Add to MAF Variance List

Close Panel

Once all the data has been loaded, close the panel by pressing the 'Close' button.



### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

Select Data  
Select Data  
imagedata\_dan01

The data is now loaded and ready to use.

← →

Name of Image Matrix  
imagedata\_dan...

- Plot Raw Data
- PCA
- MAF
- Image Overlay**
- Scalebar Tools
- Image Properties

### Data Selection Panel

Let's verify that the data was properly loaded into the image overlay panel.



### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata\_dan...

exactmass\_dan01 ...

RED

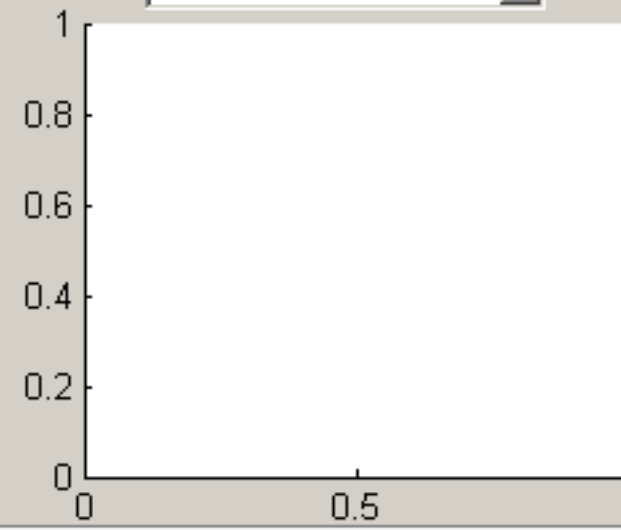
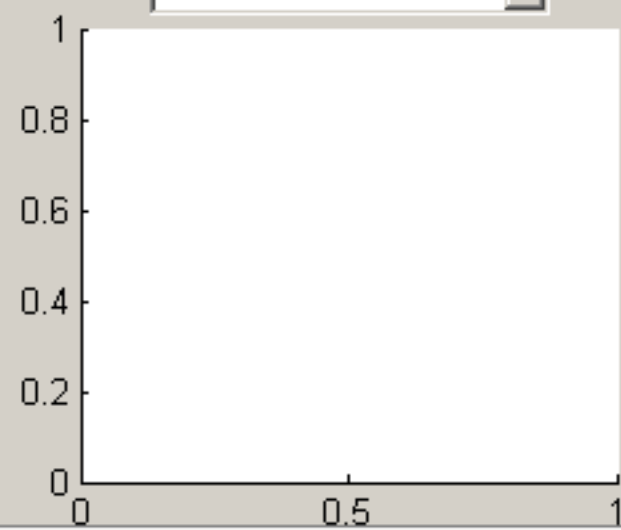
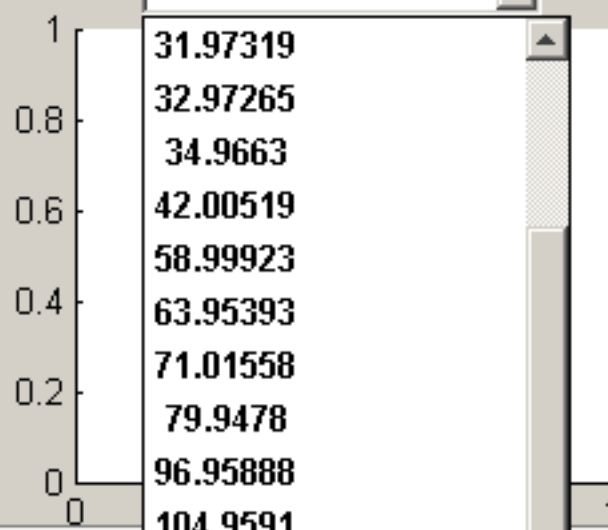
GREEN

BLUE

Choose A Peak...

Choose A Peak...

Choose A Peak...



- Create R B
- Create G B
- Save Overlay
- Close Panel

- one
- two
- three

The images loaded earlier are listed here as expected.



### Data Selection Panel

Name of Image Matrix:

Name of Variable Matrix:

### Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

- MAF\_mafloads
- MAF\_mafscors
- MAF\_mafvar
- PCA\_d
- PCA\_g
- PCA\_h
- PCA\_pcaloads
- PCA\_pcascors
- PCA\_pcavar
- PeaksIncludedIn\_one
- PeaksIncludedIn\_three
- PeaksIncludedIn\_two
- compositeimage
- exactmass\_dan01
- headerinfo\_dan01
- imagedata\_dan01
- one
- sumofselected\_dan01
- three
- totalcounts\_dan01
- two

#### Raw Data

- 
- 
- 

#### MVA Data

- 
- 
- 
- 
- 
- 

You can also load data from MVA by selecting the correct variable from the list and pressing the corresponding button under the 'MVA Data' heading.

Name of Image Matrix

imagedata\_dan...

- Plot Raw Data
- PCA**
- MAF
- Image Overlay
- Scalebar Tools
- Image Properties

- Plot PCA Scores
- Plot PCA Loadings

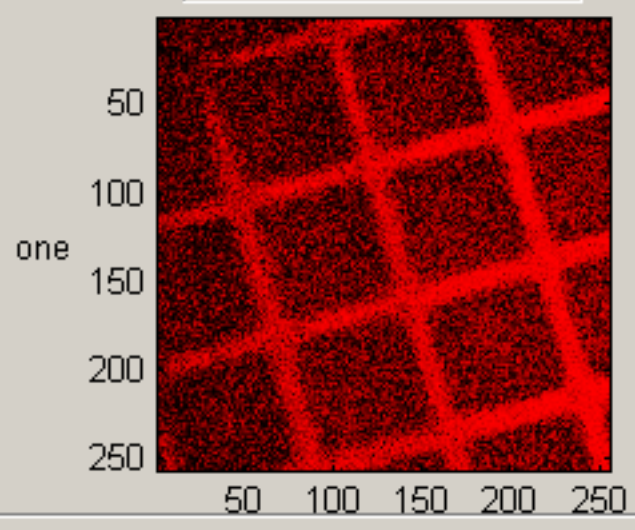
Selectio

You can verify that the data was loaded in the proper lists for plotting the MVA results by selecting the data you want to work with.



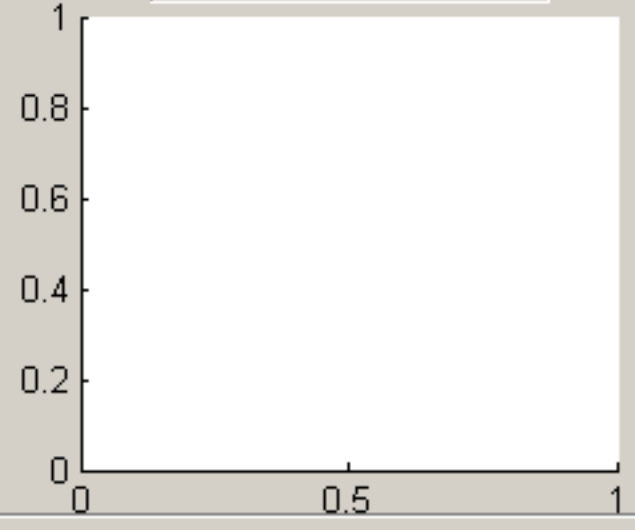
RED

one



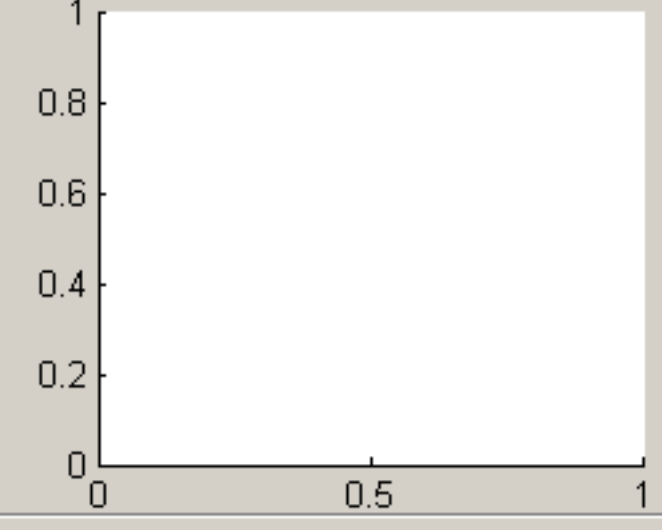
GREEN

Choose A Peak...



BLUE

Choose A Peak...



Create R G B

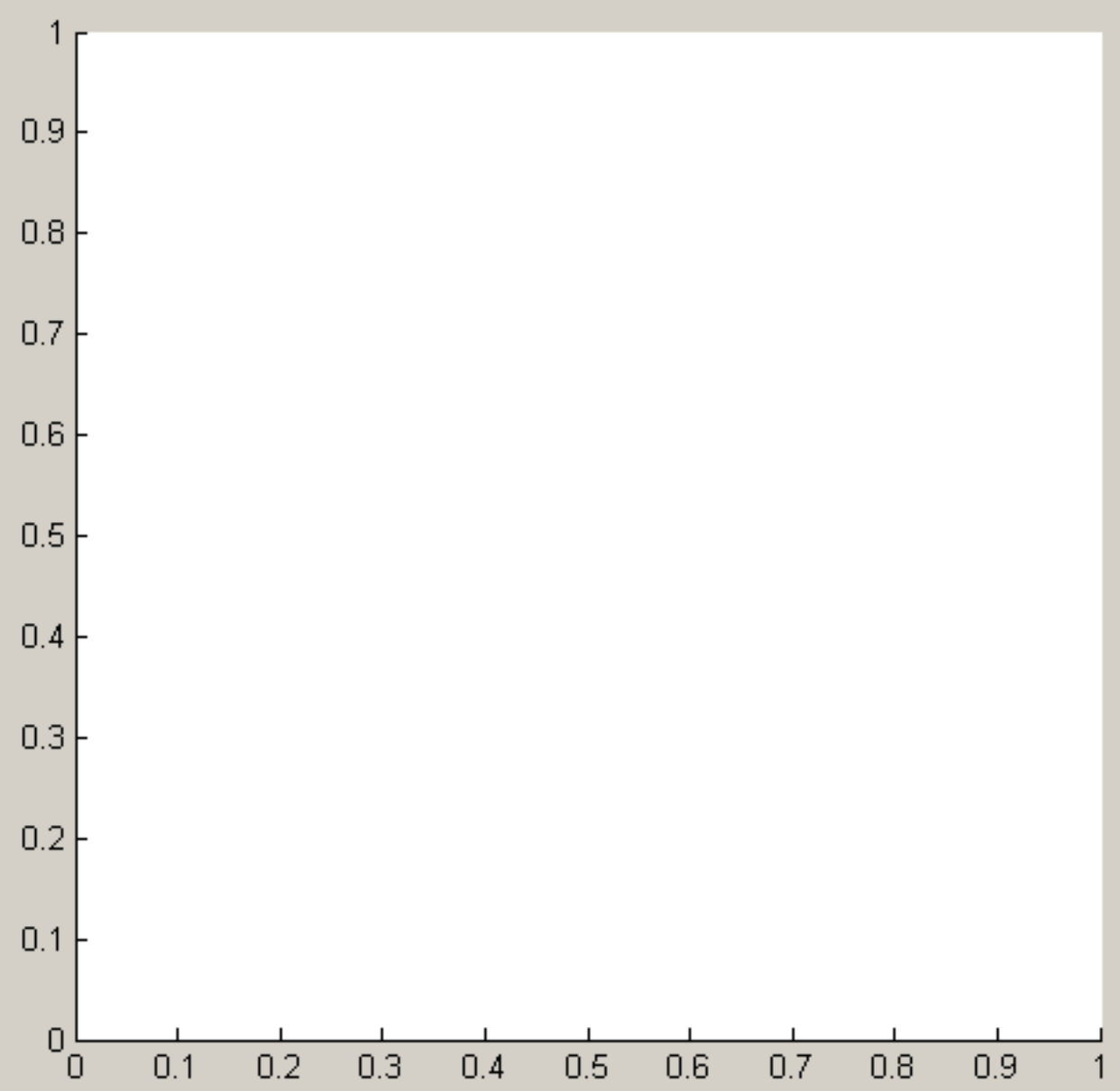
Create R G

Create R B

Create G B

Save Overlay

Close Panel



### Data Selection Panel

Name of Image Matrix

imagedata\_dan...

Name of Variable Matrix

exactmass\_dan01 ...

Scores

Select Scores ...

- Select Scores
- PCA\_pcascors

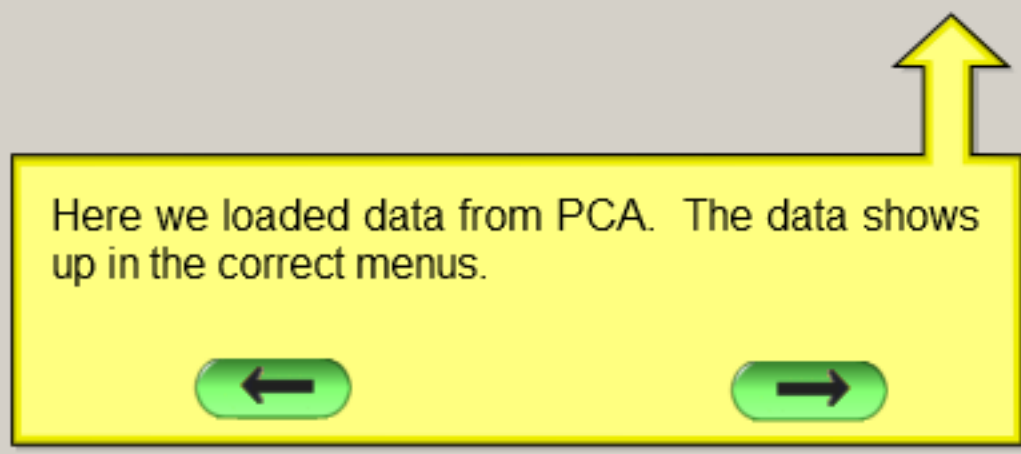
Loadings

Select Loadings ...

Variance

Select Variance ...

Here we loaded data from PCA. The data shows up in the correct menus.



Load Selected Scores

Scores Matrix: None

PC To Plot: PC#

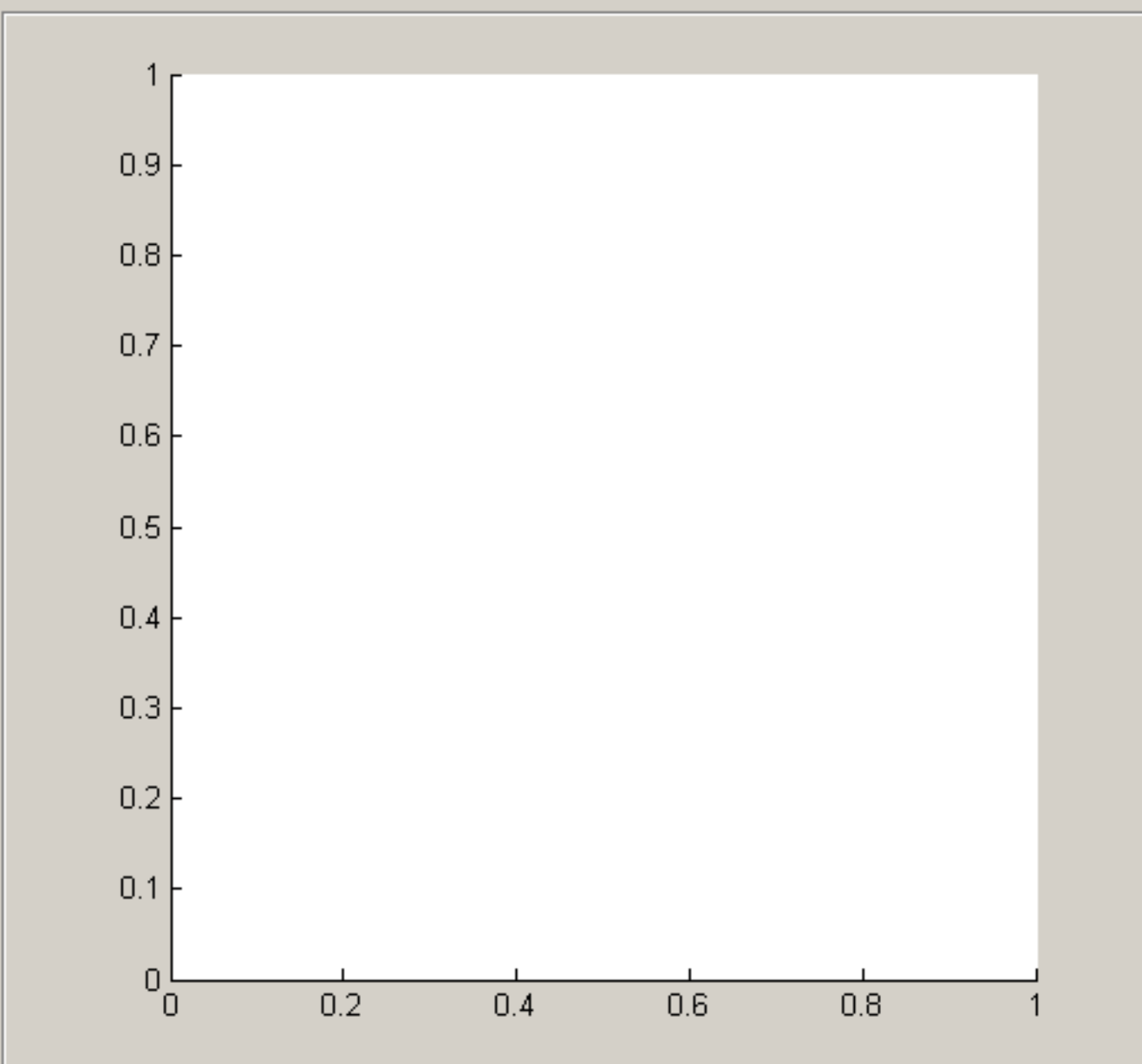
Plot PCA Scores

Show Scalebar Tools Panel

Show Image Properties Panel

Save Score Image

Close Panel



### Data Selection Panel

Name of Image Matrix

imagedata\_dan...

Name of Variable Matrix

exactmass\_dan01 ...

Scores

Select Scores ...

Loadings

Select Loadings ...

Variance

Select Variance ...

- Select Loadings
- PCA\_pcaloads

All of the data was loaded properly.



Load Selected Scores

Scores Matrix: None

PC To Plot: PC#

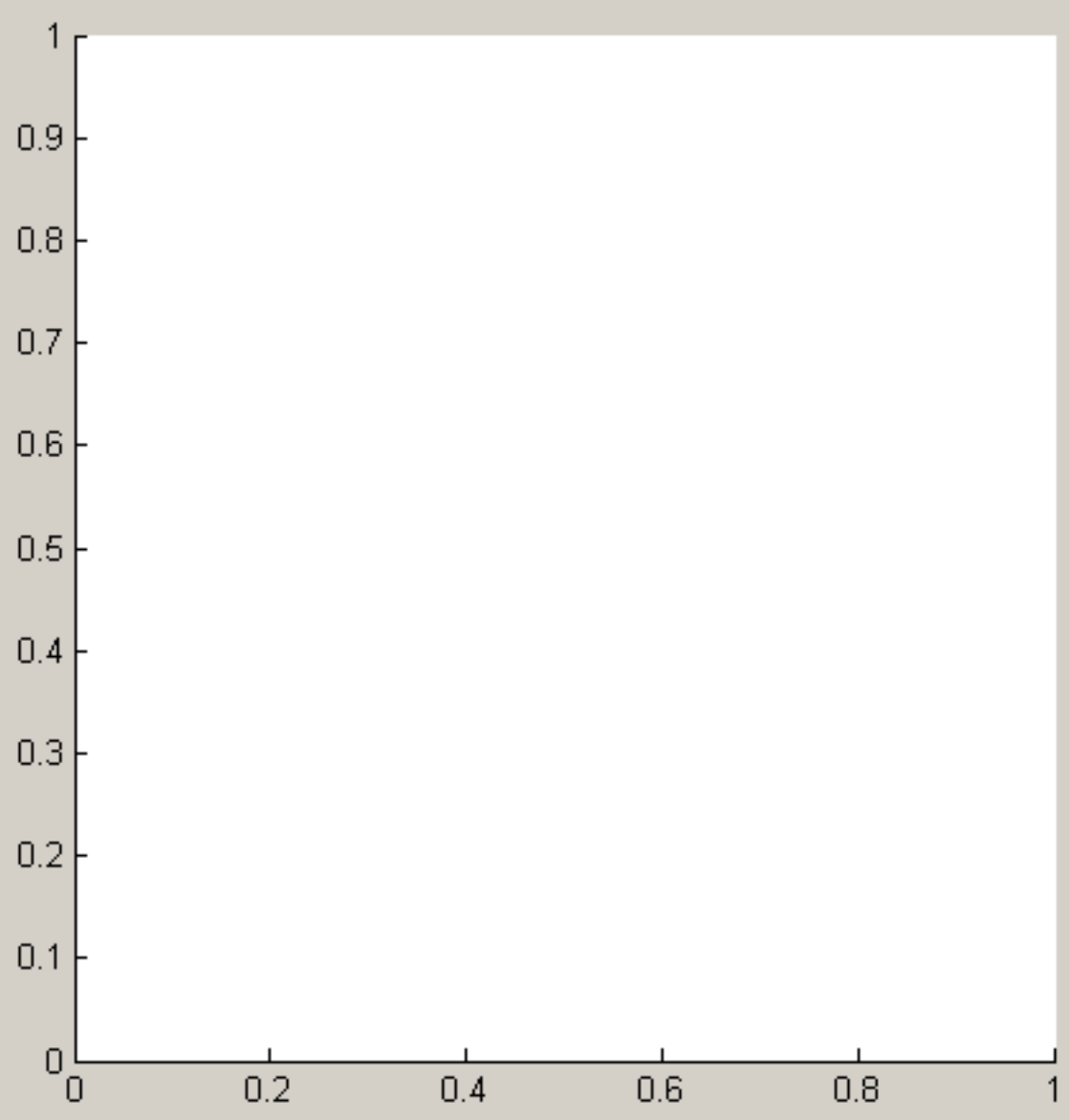
Plot PCA Scores

Show Scalebar Tools Panel

Show Image Properties Panel

Save Score Image

Close Panel





### Data Selection Panel

Name of Image Matrix

imagedata\_dan...

Name of Variable Matrix

exactmass\_dan01 ...

Scores

Select Scores ...

Loadings

Select Loadings ...

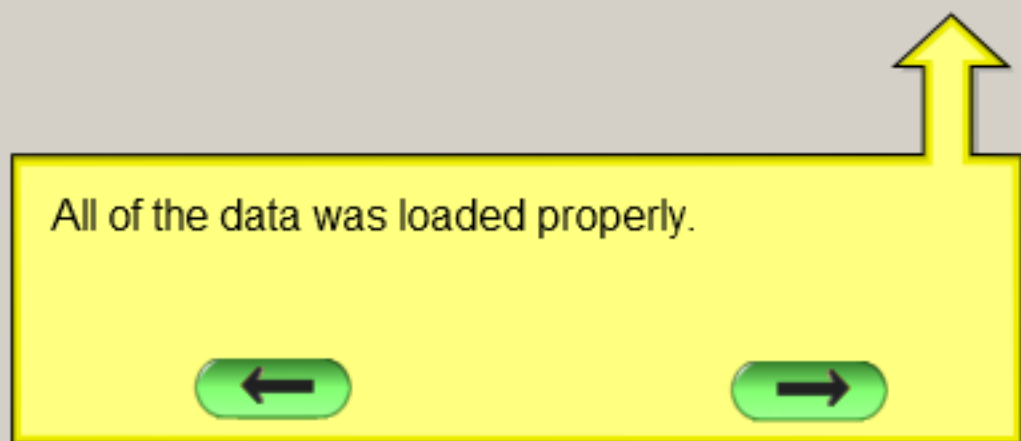
Variance

Select Variance ...

Select Variance

PCA\_pcavar

All of the data was loaded properly.



Load Selected Scores

Scores Matrix: None

PC To Plot: PC#

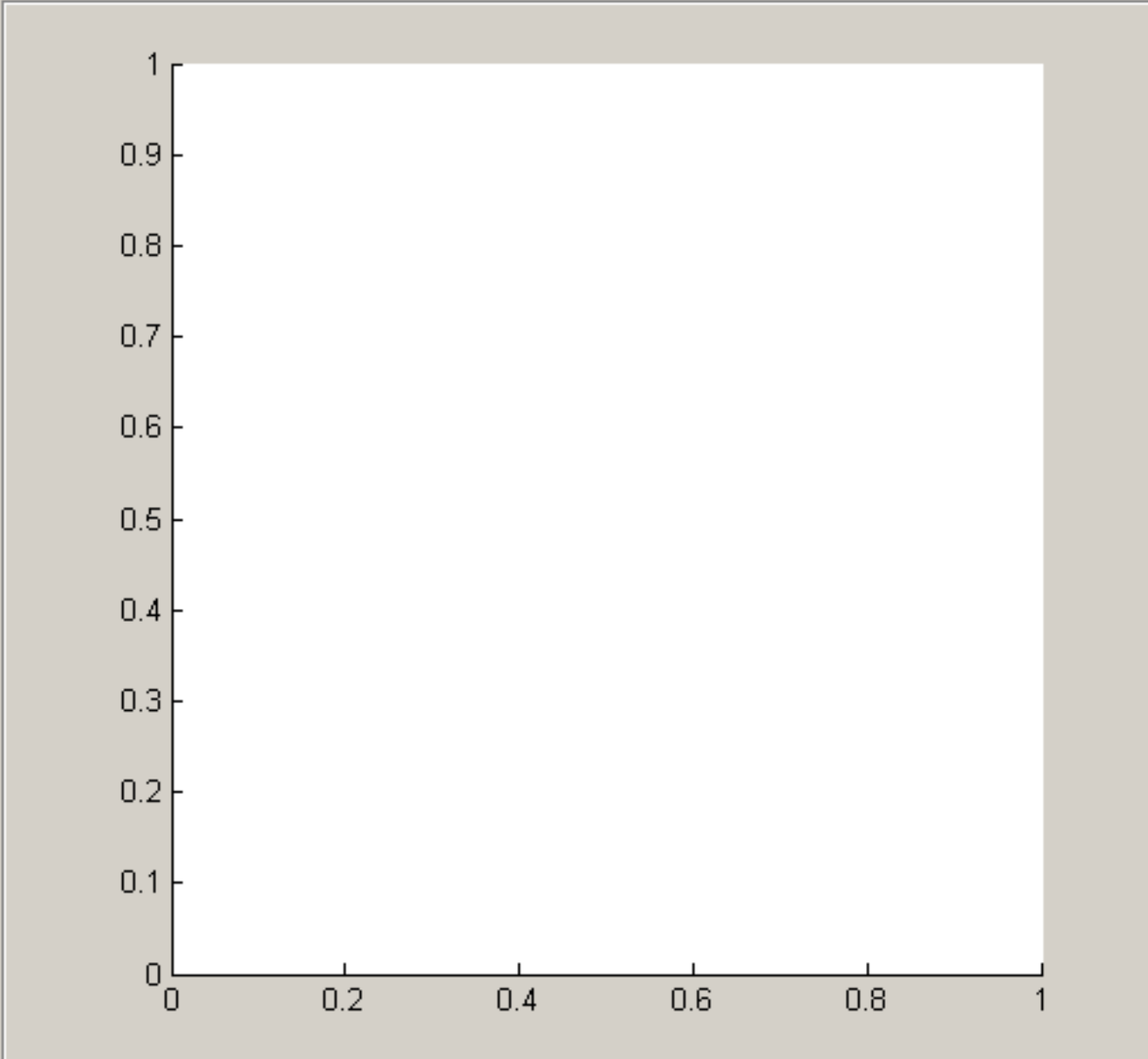
Plot PCA Scores

Show Scalebar Tools Panel

Show Image Properties Panel

Save Score Image

Close Panel



### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

imagedata\_dan... ▾

exactmass\_dan01 ... ▾



Now let's import data from a .bif file.

Importing a .bif works the same as importing a .bif6 file, so here we only show importing a .bif file.



Import Data  
Normalize Data  
Crop Image  
Filter Image  
Select Data  
Select Variables

Import From Workspace  
Import Bif File  
Import Bif6 File



Choose 'Import Bif File' from the 'Data Pre Processing' -> 'Import Data' menu.  
The 'Import Bif6 File' panel works the same way.



### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

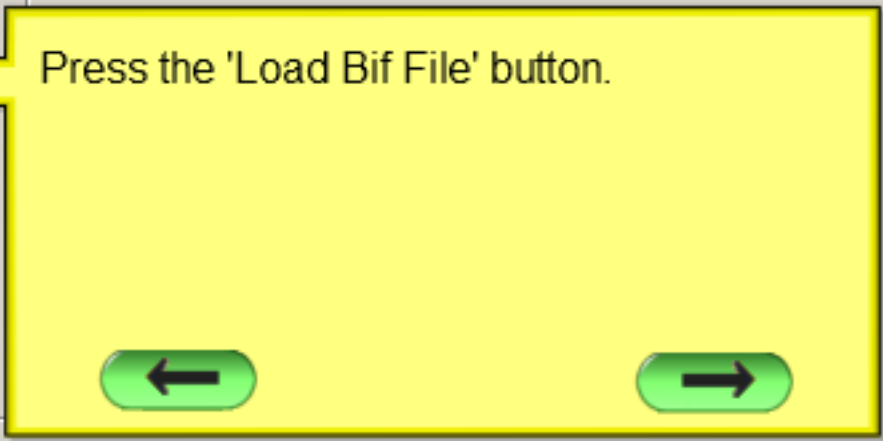
Select Data

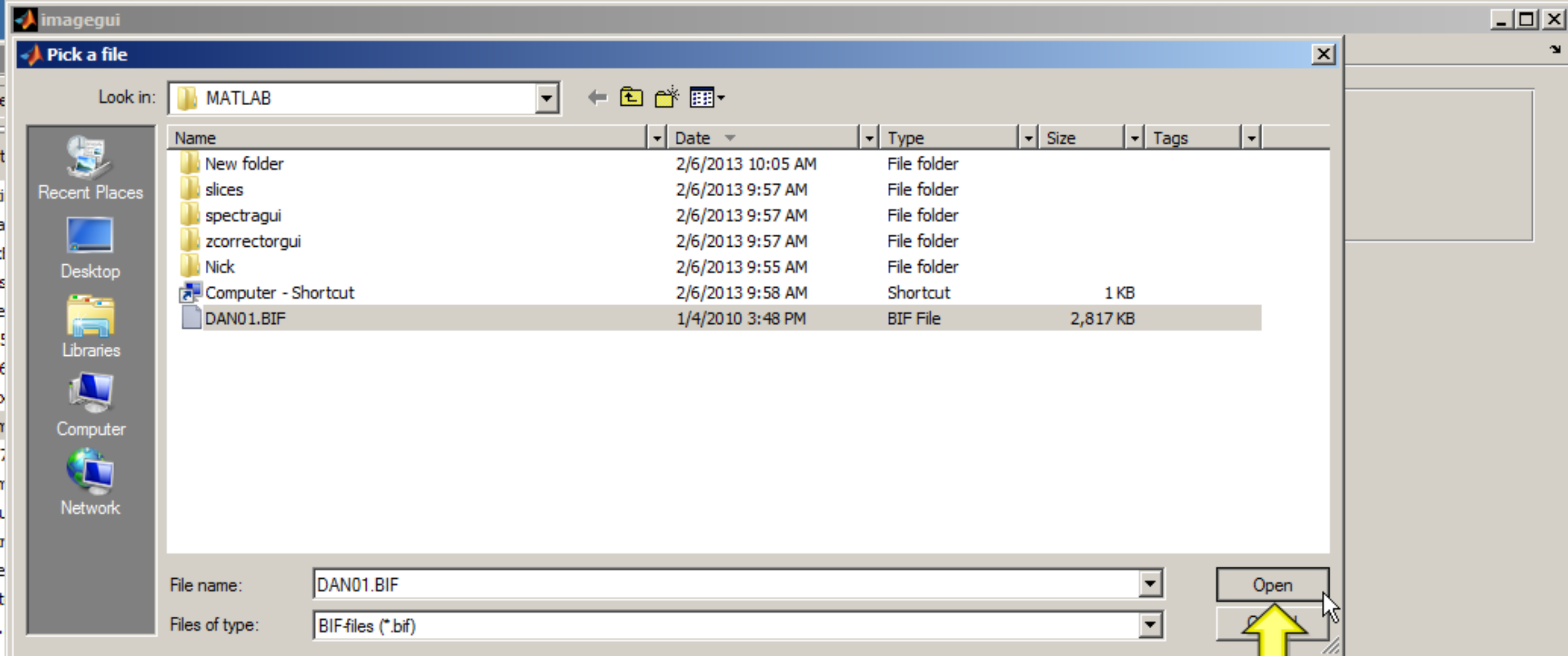
Select Variables

Load Bif File

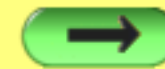
Close

Press the 'Load Bif File' button.





Select the file you want to load and press the 'Open' button.



### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

- Select Data
- Select Data
- imagedata\_DAN01

And the data is loaded into the workspace and placed in the proper menus within the imagegui.

← →

Load Bif File

Close

### Data Selection Panel

Name of Image Matrix

Select Data

Name of Variable Matrix

Select Variables  
Select Variables  
exactmass\_DAN01

And the data is loaded into the workspace and placed in the proper menus within the imagegui.



Load Bif File

Close

### Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

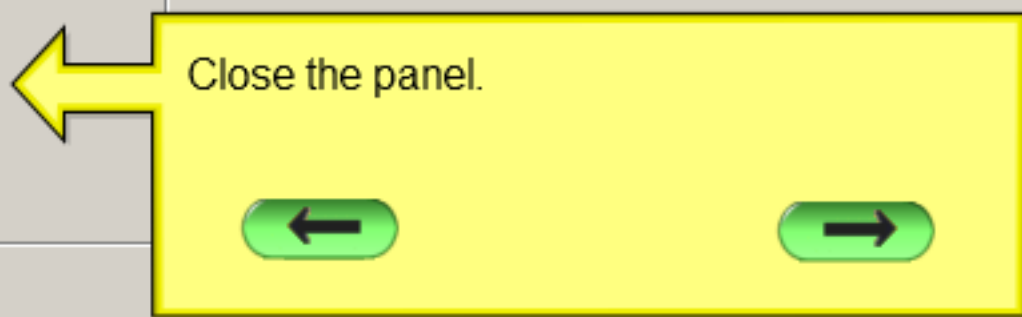
Select Data

Select Variables

Load Bif File

Close

Close the panel.





## Workspace

Name	Value
exactmass_dan01	<20x8 c
headerinfo_dan01	
imagedata_dan01	
sumofselected_dan01	
totalcounts_dan01	

## Command Window

```
>> imagegui  
>>
```

The data is loaded into the Matlab workspace.

The files loaded are:

Exactmass - a list of the peak masses included in the .bif file

Headerinfo - the header from the .bif file

imagedata - the image data matrix

sumofselected - an image of the sum of all peaks in the .bif file

totalcounts - the total counts image from the .bif file.

The extension on each of these variables corresponds with the name of the file loaded.



Current Directory Workspace

## Command History

```
5/6/11 11:22 AM -->  
└─ imagegui
```

### 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.

