

Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

Select Data

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

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Name of Variable Matrix

Select Data

Select Variables

This tutorial covers how to align to images and then export the shifted and cropped data.

NOTES:

-This panel is experimental. The results will be accurate within a few microns as long as you have features you can align to.

-In order to align ToF-SIMS images you need to make sure that the raster settings for all collected images are similar and that the data is collected at the same pixel resolution.

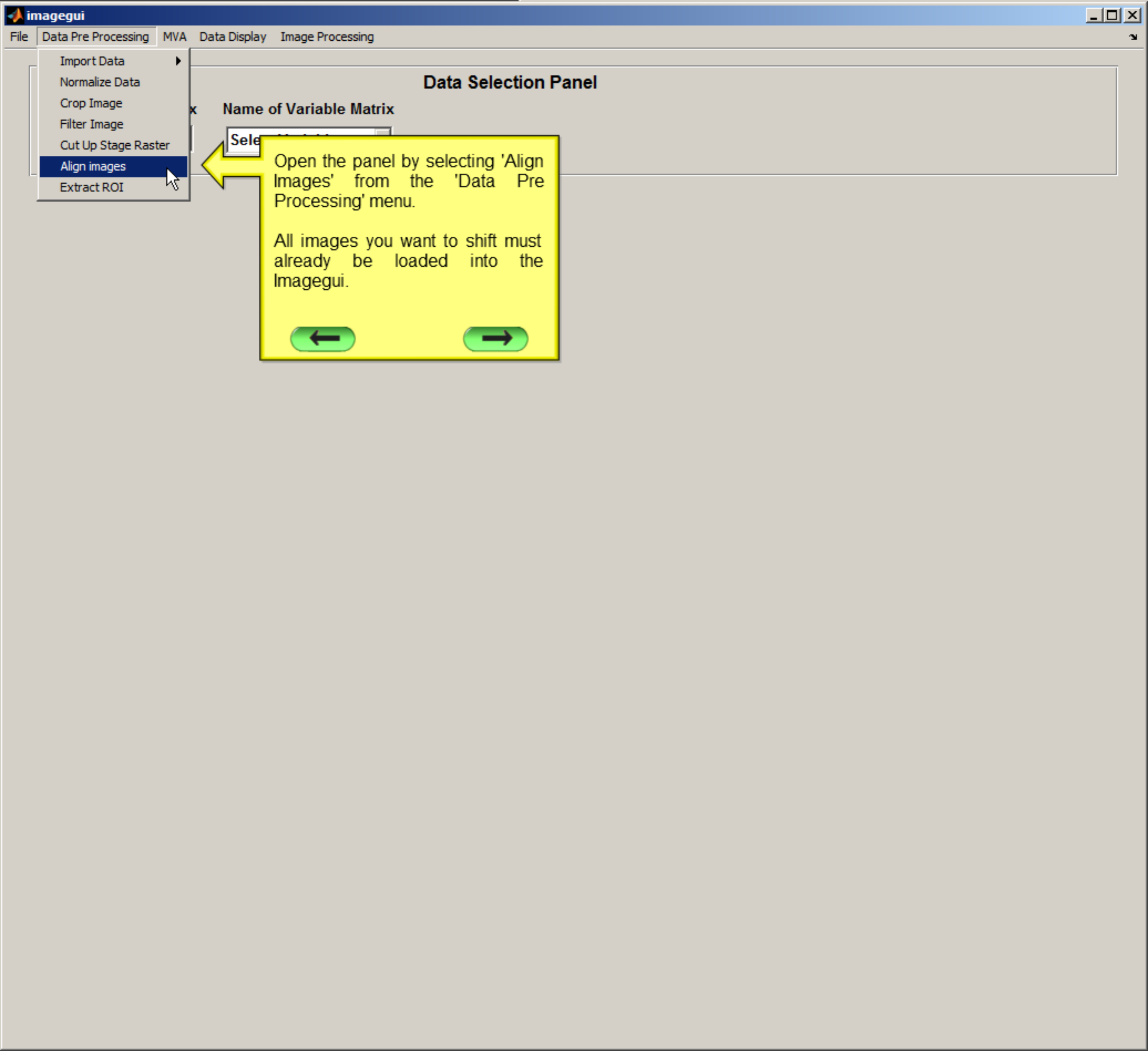
This panel allows the user to align any two images and crop them to the same size. The images can then be used for further processing as desired.

This panel only allows shifting in X and Y. It does not do image rotation.

It is important that the images you are using have at least some discernible features that can be used for alignment.

Potential uses of this panel include aligning high mass and high spatial resolution images taken from the same spot, or aligning optical microscopy images with SIMS images so you can later use the opticalm images as ROI masks.





- Import Data
- Normalize Data
- Crop Image
- Filter Image
- Cut Up Stage Raster
- Align images**
- Extract ROI

Data Selection Panel

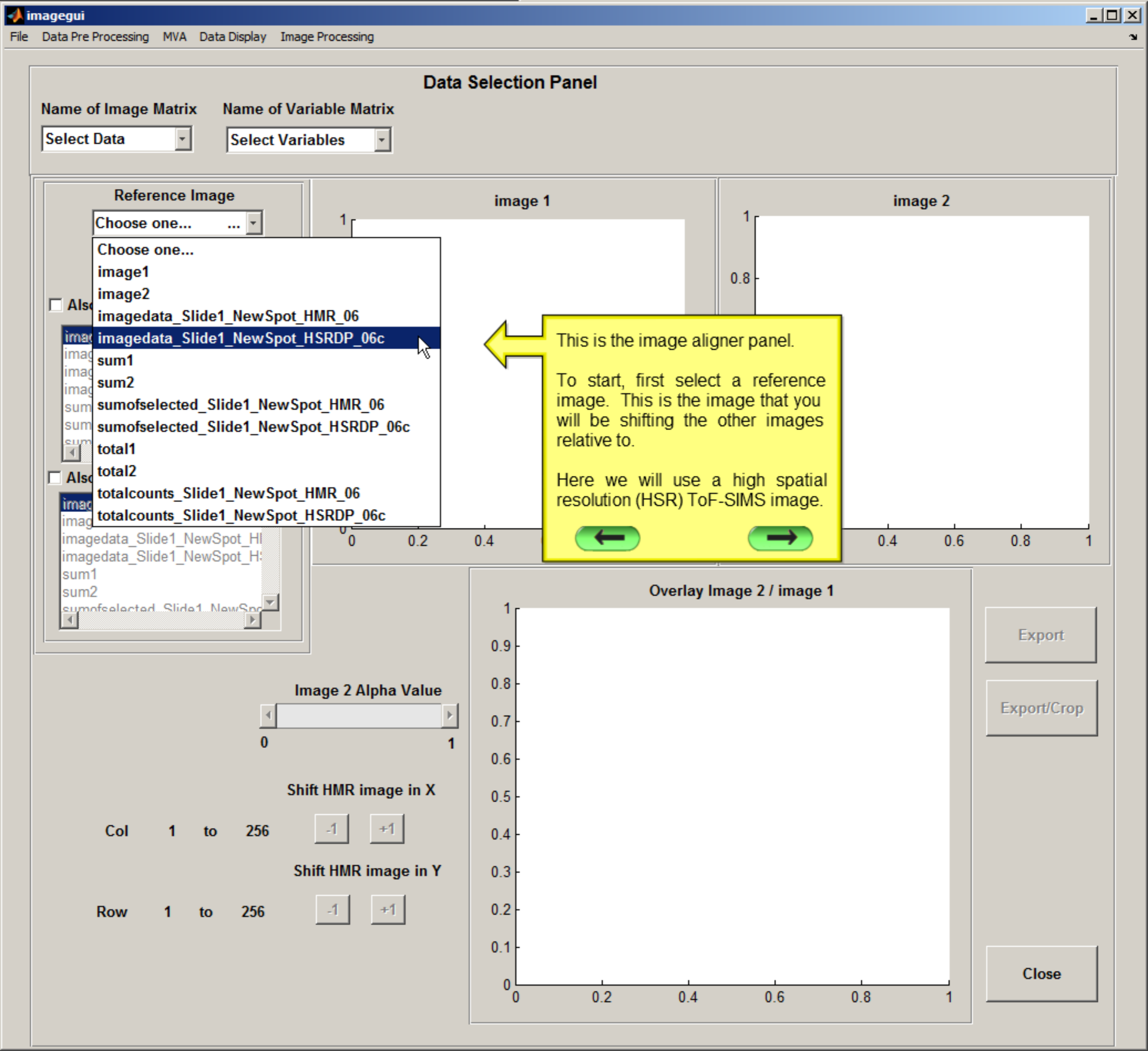
x Name of Variable Matrix

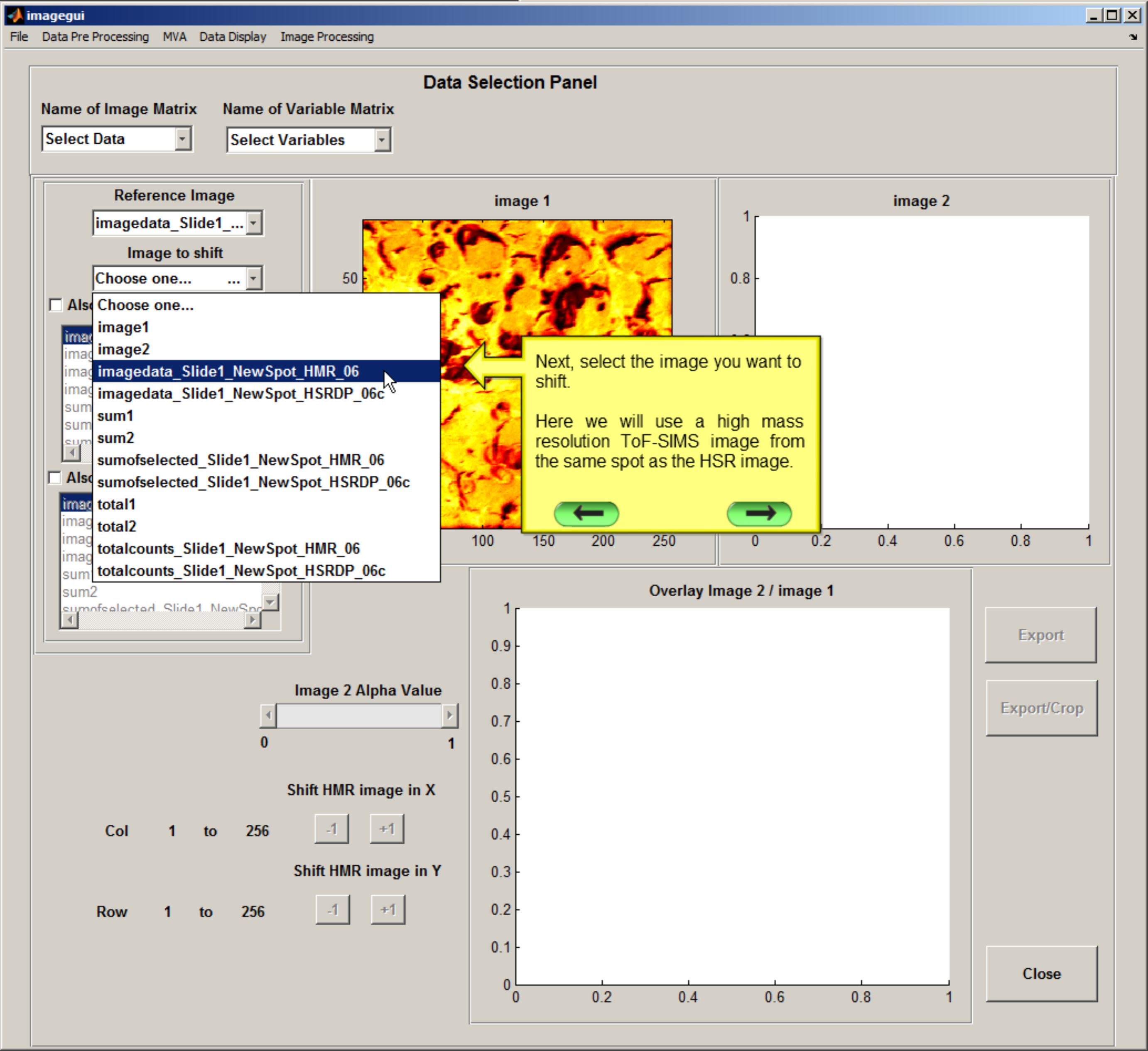
Select

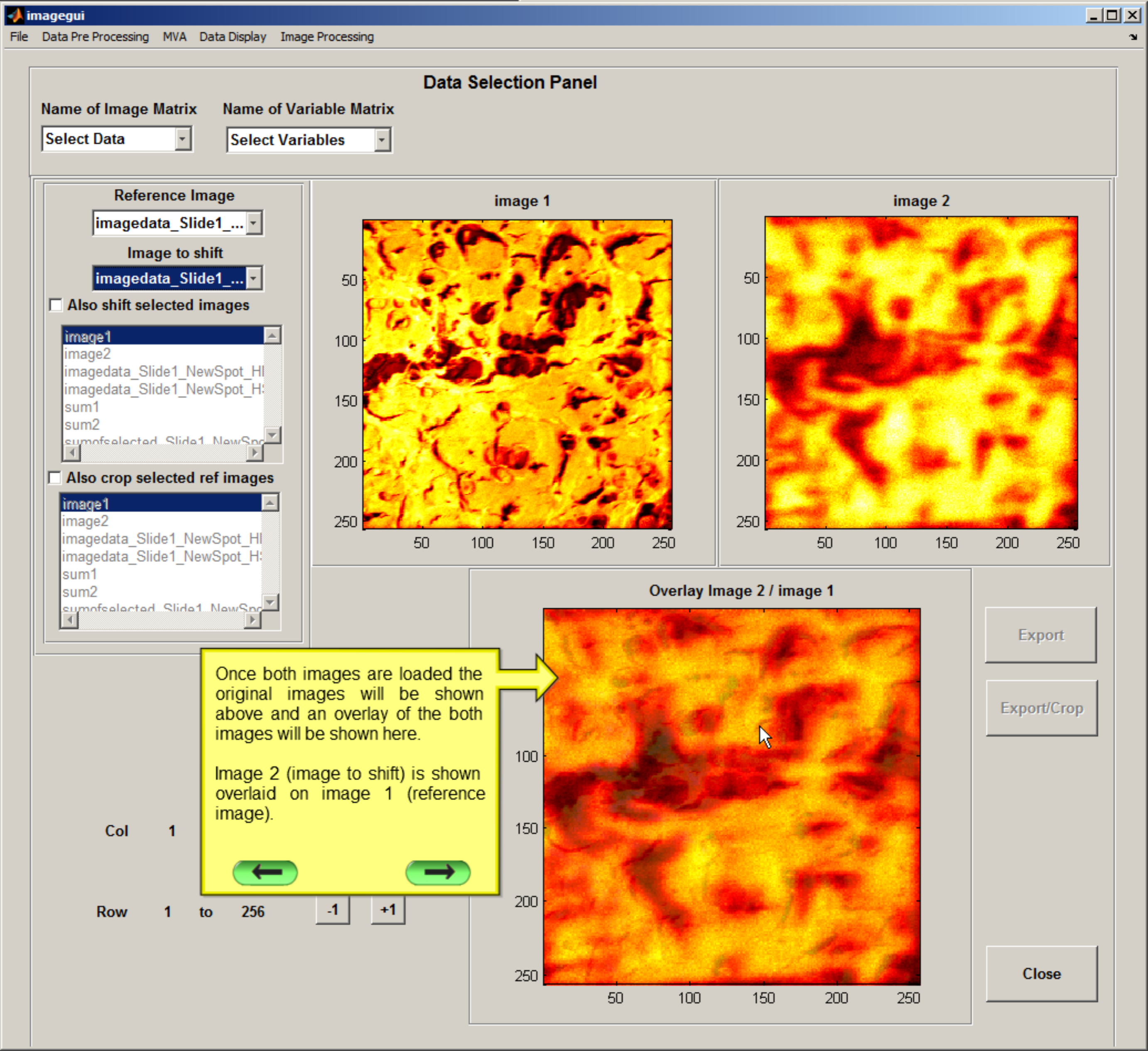
Open the panel by selecting 'Align Images' from the 'Data Pre Processing' menu.

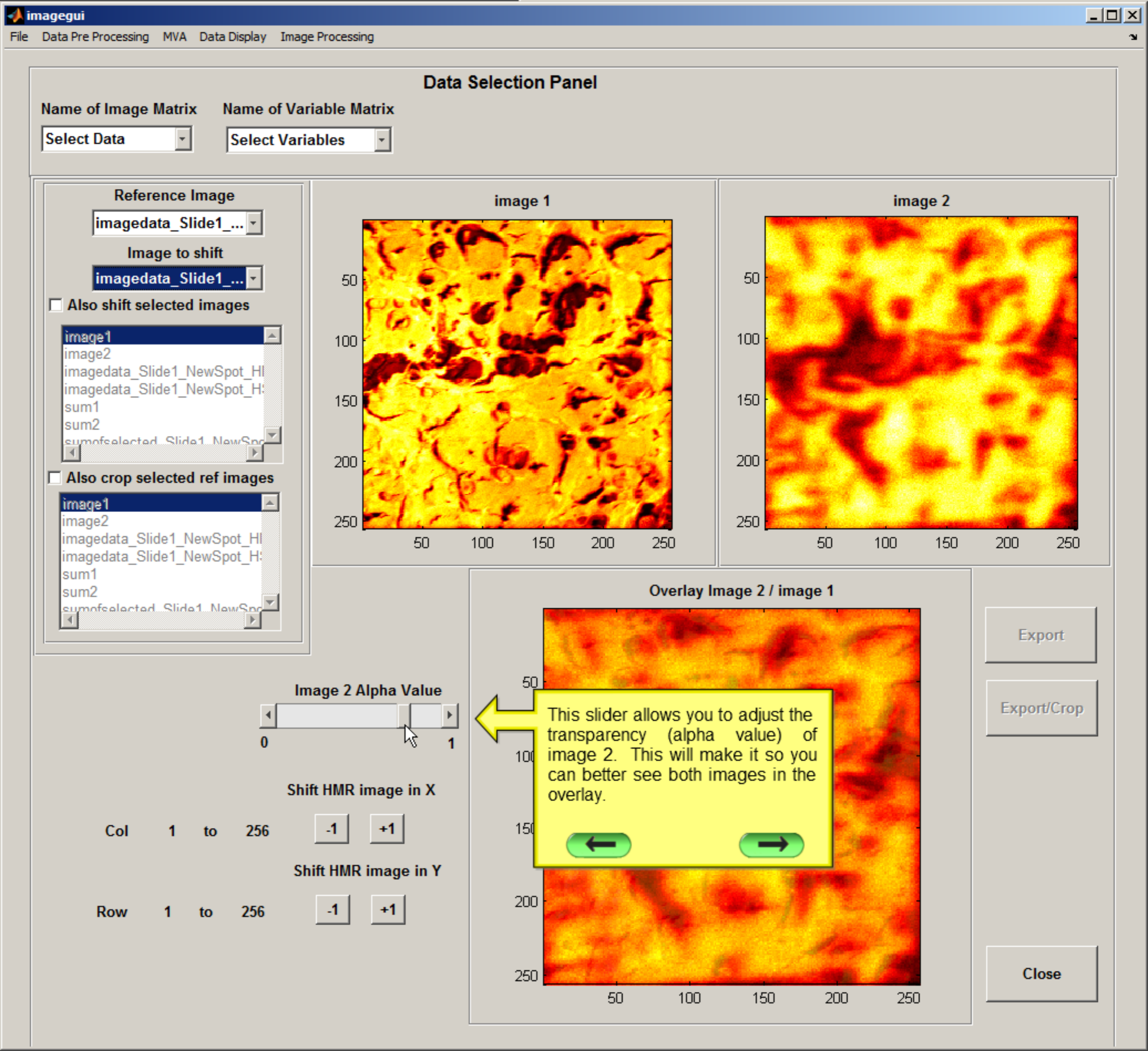
All images you want to shift must already be loaded into the Imagegui.

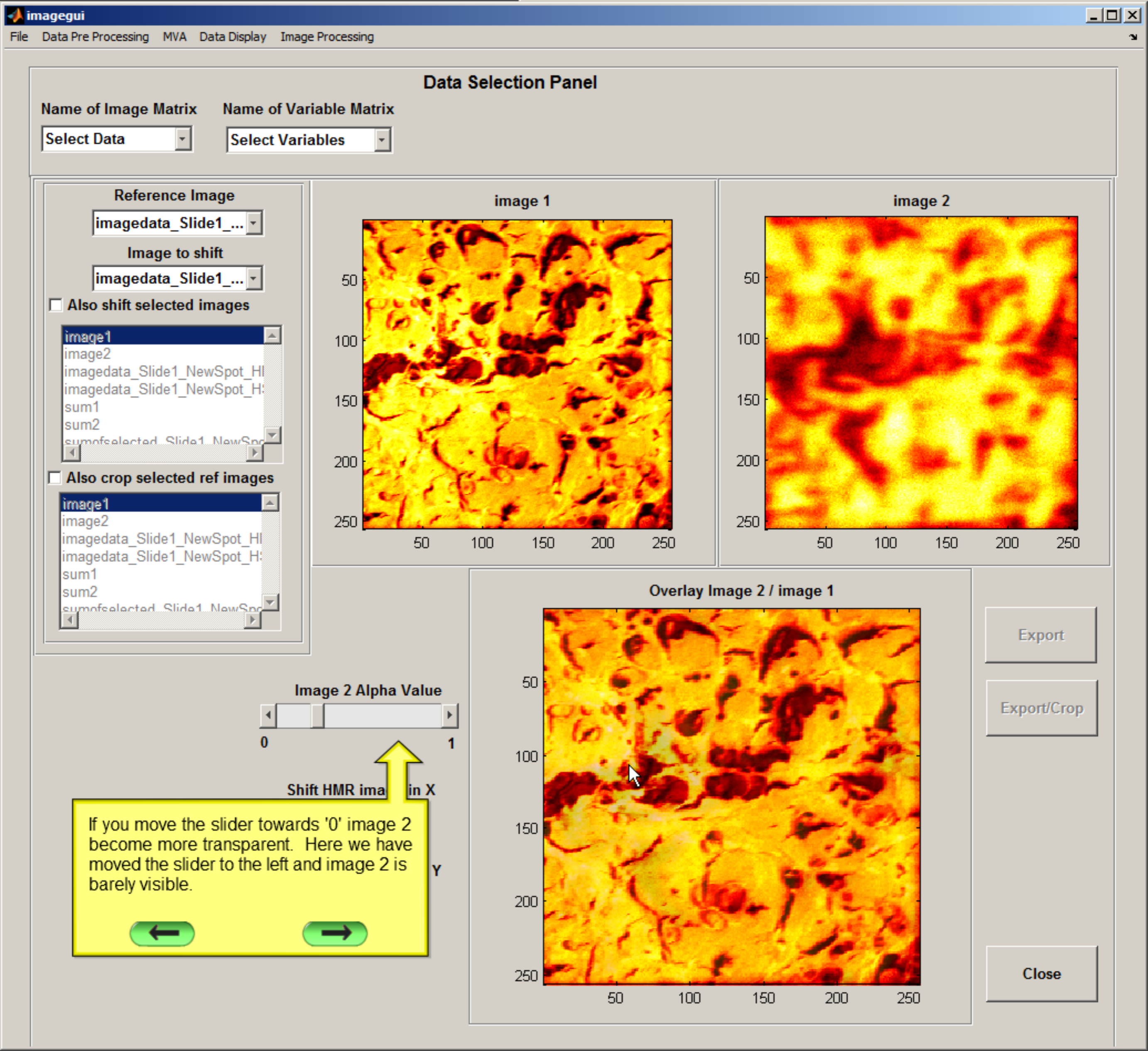
← →











Name of Image Matrix

Name of Variable Matrix

Select Data

Select Variables

Reference Image

imagedata_Slide1_...

Image to shift

imagedata_Slide1_...

☐ Also shift selected images

image1
image2
imagedata_Slide1_NewSpot_HI
imagedata_Slide1_NewSpot_H:
sum1
sum2
sumofselected_Slide1_NewSpot

☐ Also crop selected ref images

image1
image2
imagedata_Slide1_NewSpot_HI
imagedata_Slide1_NewSpot_H:
sum1
sum2
sumofselected_Slide1_NewSpot

image 1

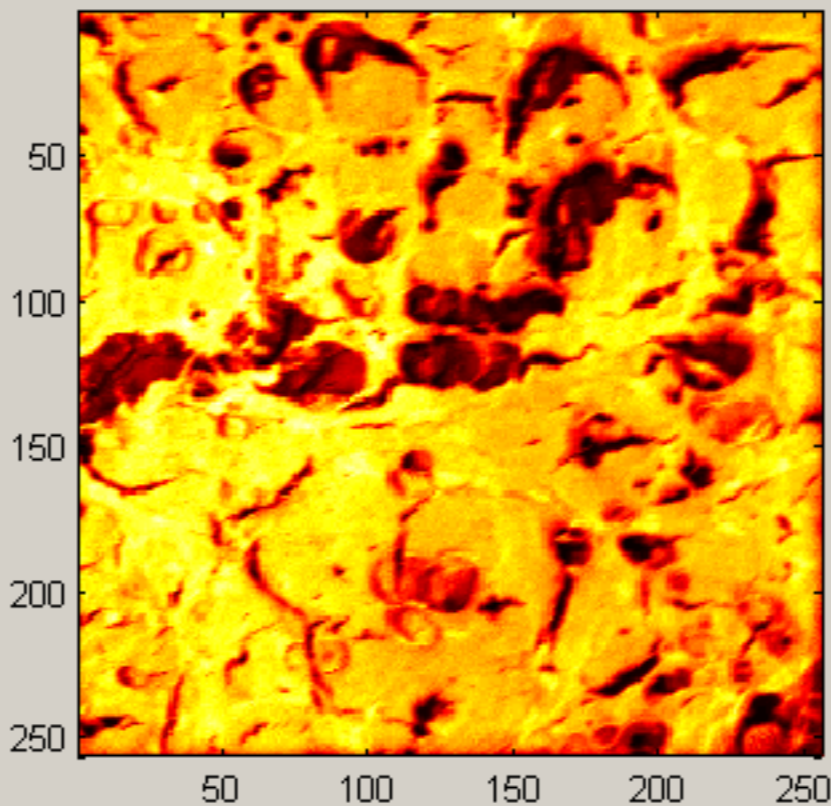
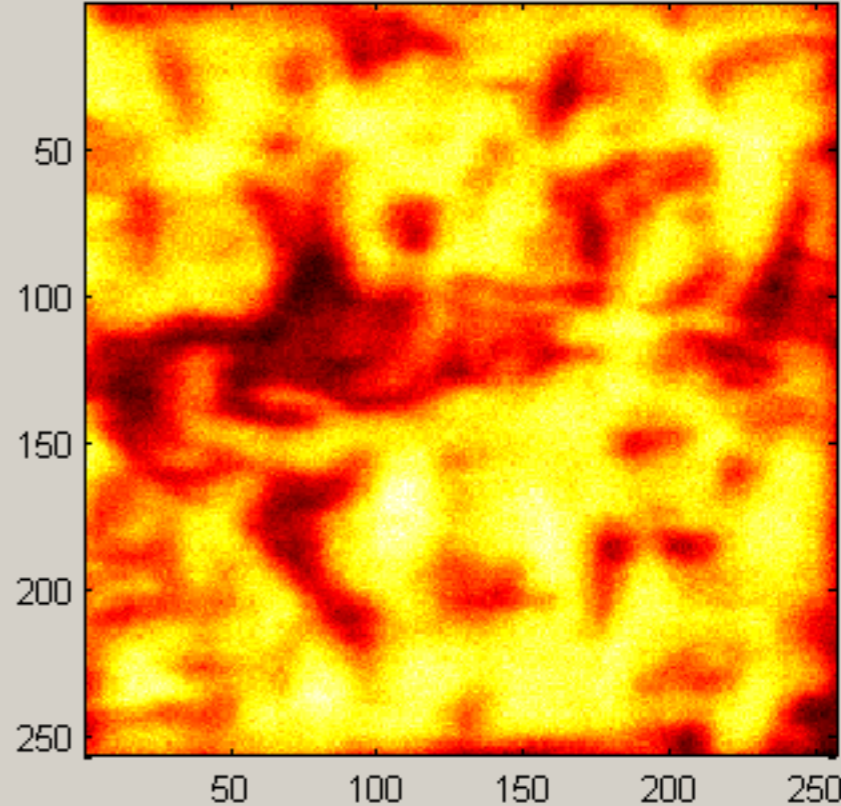


image 2



Overlay Image 2 / image 1

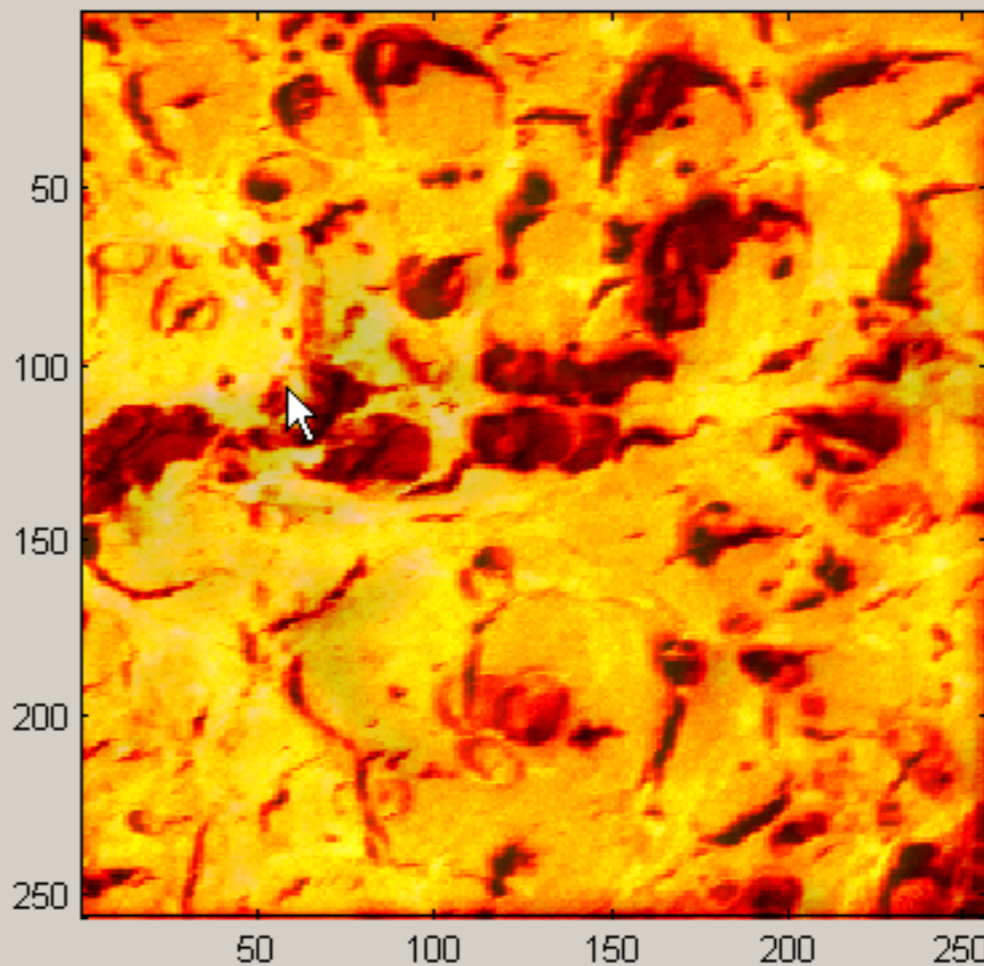
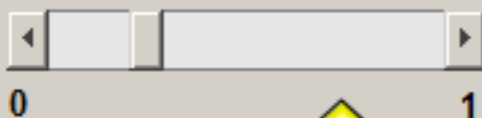


Image 2 Alpha Value



Shift HMR ima in X

If you move the slider towards '0' image 2 become more transparent. Here we have moved the slider to the left and image 2 is barely visible.



Export

Export/Crop

Close

Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

Select Data

Select Variables

Reference Image

imagedata_Slide1_...

Image to shift

imagedata_Slide1_...

☐ Also shift selected images

image1
image2
imagedata_Slide1_NewSpot_HI
imagedata_Slide1_NewSpot_H:
sum1
sum2
sumofselected_Slide1_NewSpot

☐ Also crop selected ref images

image1
image2
imagedata_Slide1_NewSpot_HI
imagedata_Slide1_NewSpot_H:
sum1
sum2
sumofselected_Slide1_NewSpot

image 1

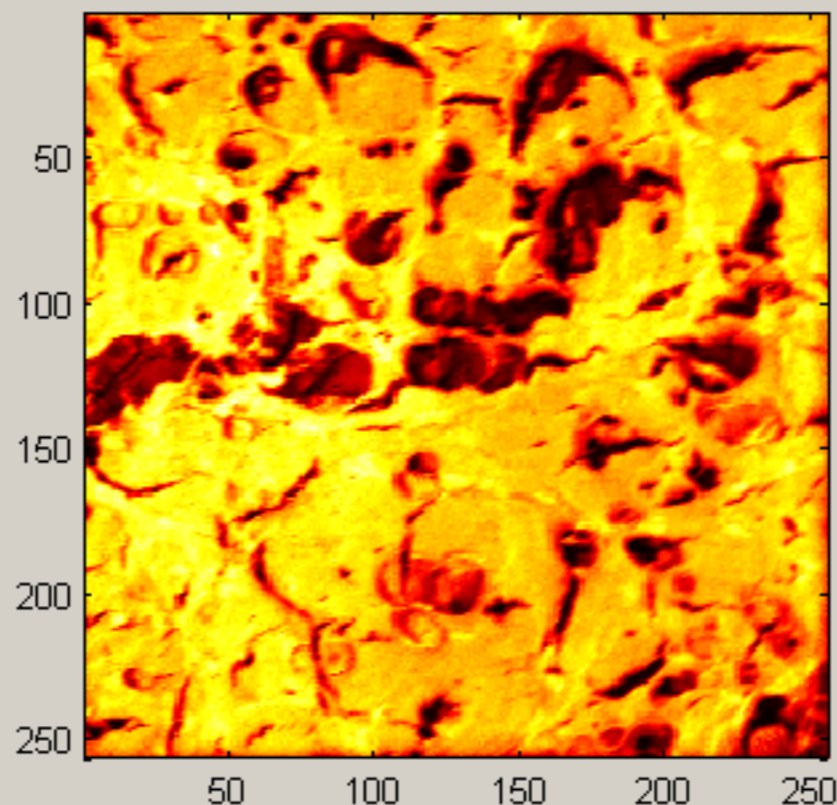
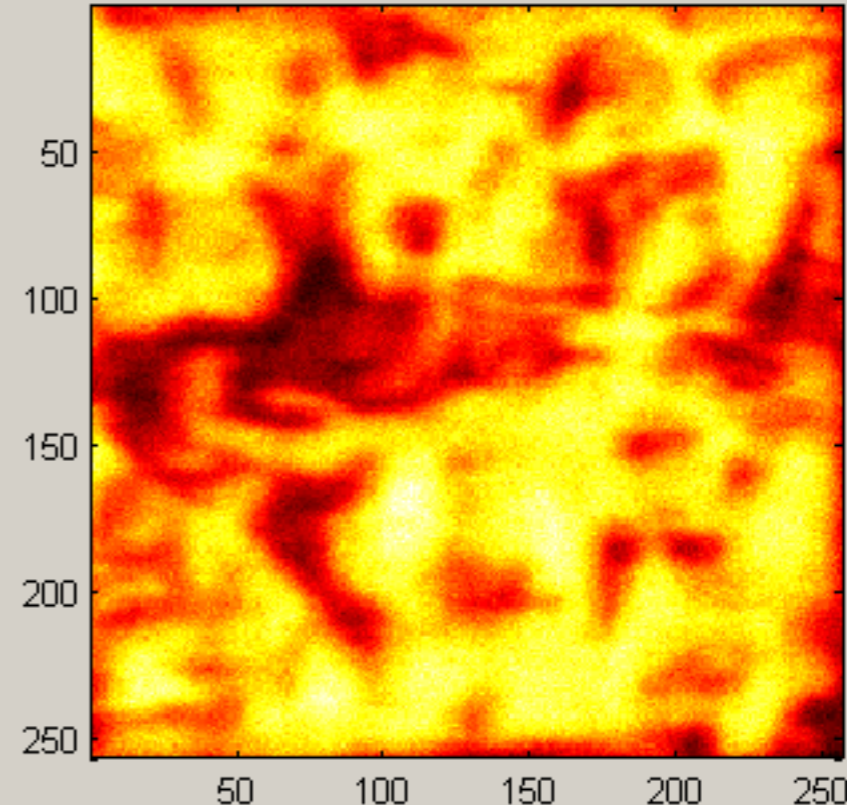
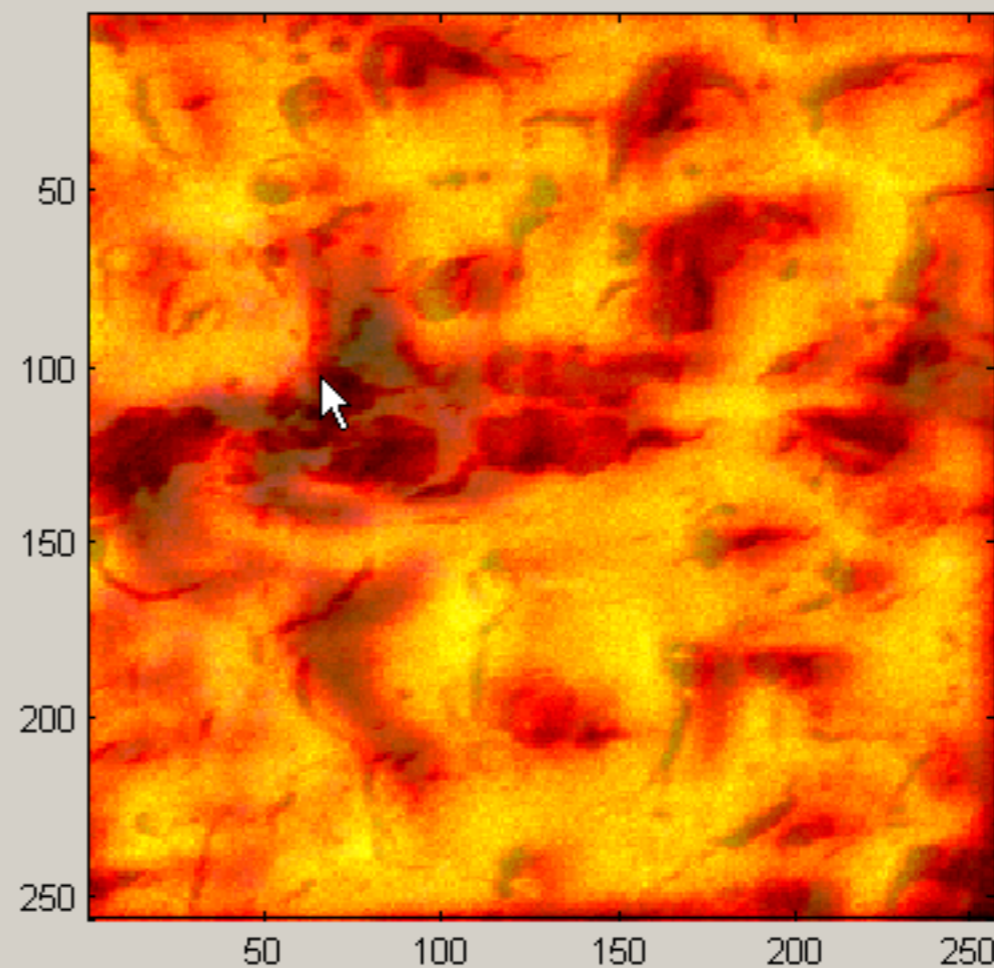


image 2



Overlay Image 2 / image 1

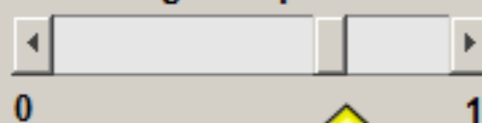


Export

Export/Crop

Close

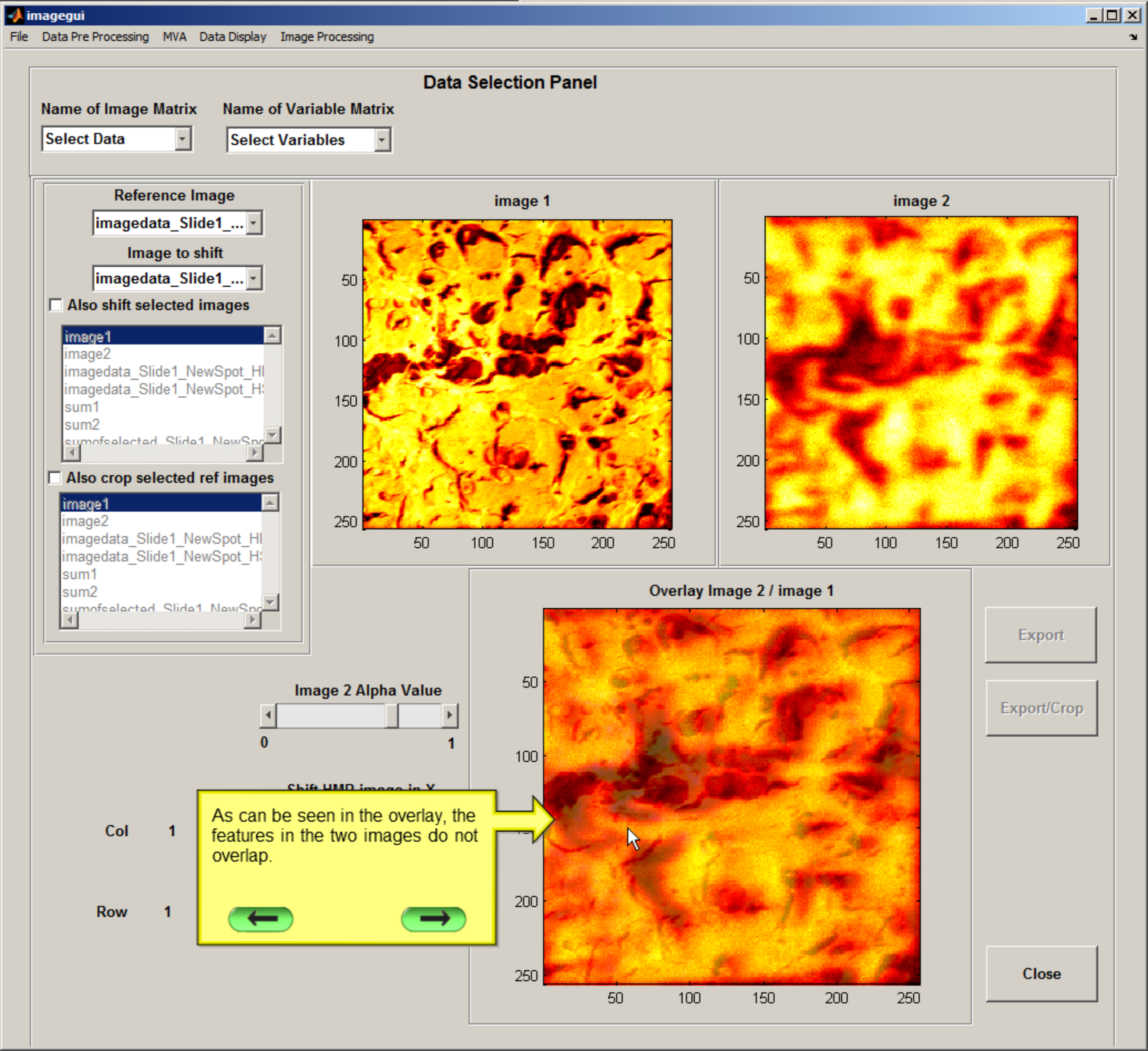
Image 2 Alpha Value

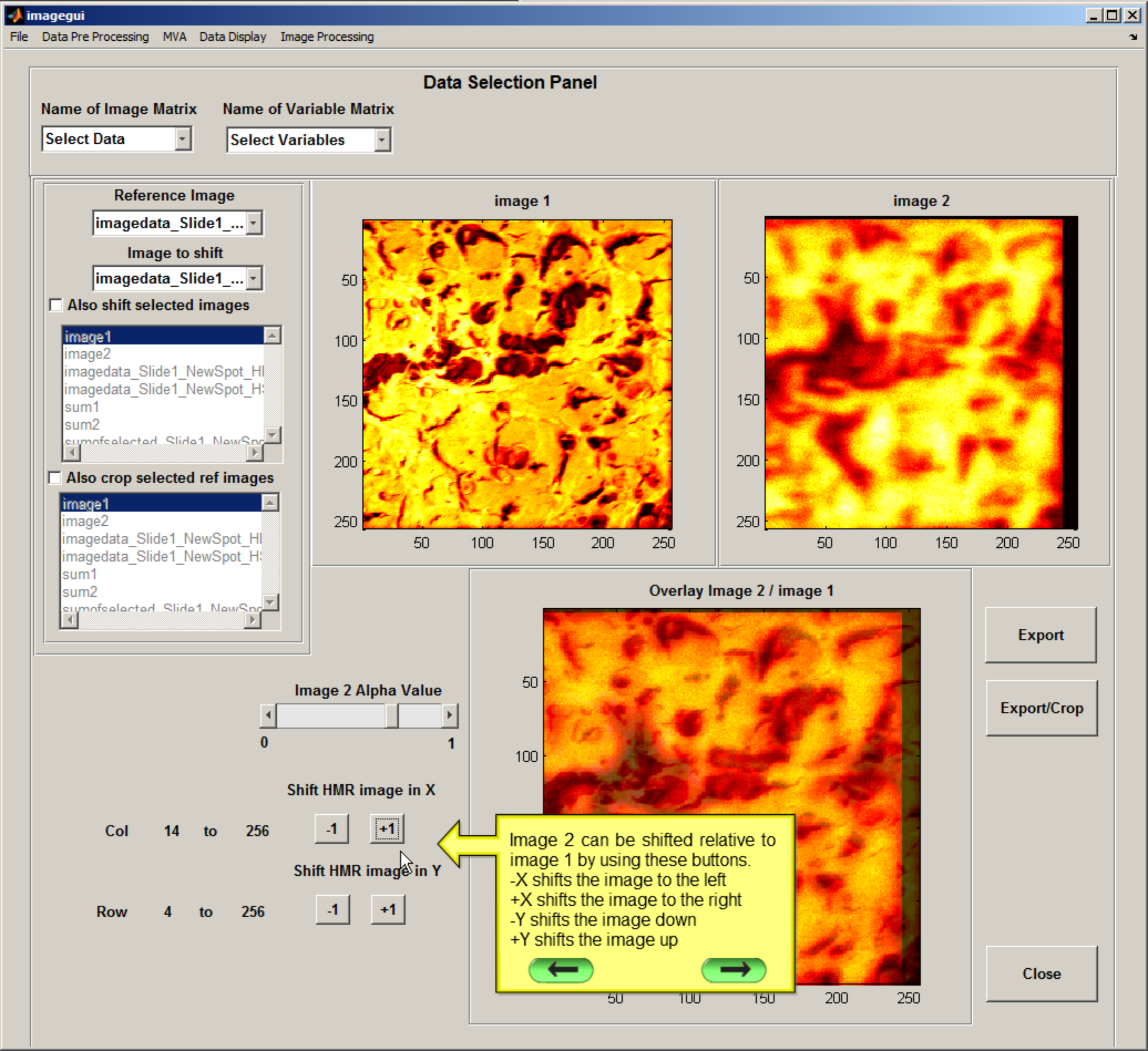


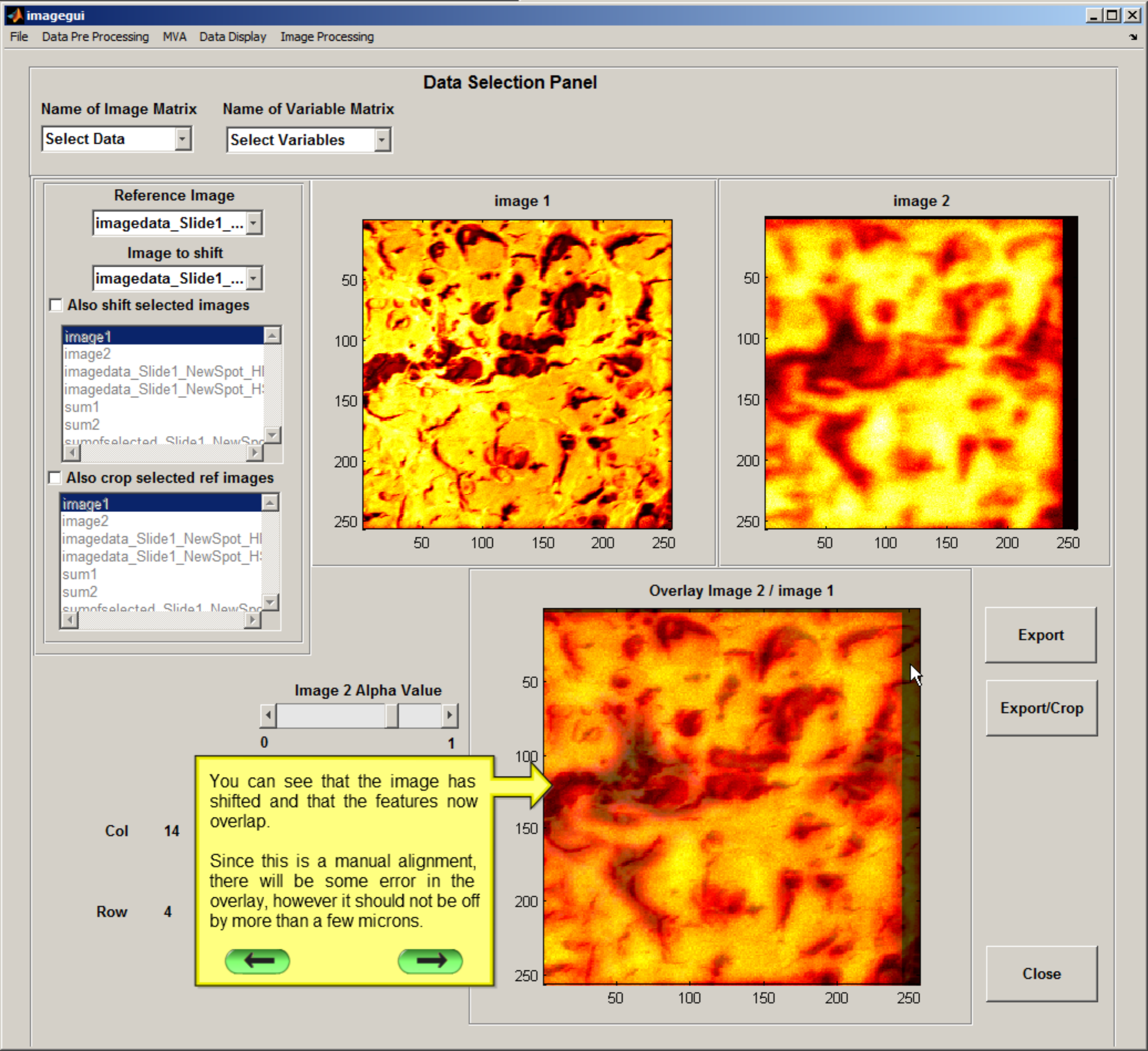
Shift HMR ima in X

Now we have moved the slider to the right
and we can see both images clearly.









Name of Image Matrix
Select Data

Name of Variable Matrix
Select Variables

Reference Image

imagedata_Slide1_...

Image to shift

imagedata_Slide1_...

☐ Also shift selected images

image1
image2
imagedata_Slide1_NewSpot_HI
imagedata_Slide1_NewSpot_H:
sum1
sum2
sumofselected_Slide1_NewSpot

☐ Also crop selected ref images

image1
image2
imagedata_Slide1_NewSpot_HI
imagedata_Slide1_NewSpot_H:
sum1
sum2
sumofselected_Slide1_NewSpot

image 1

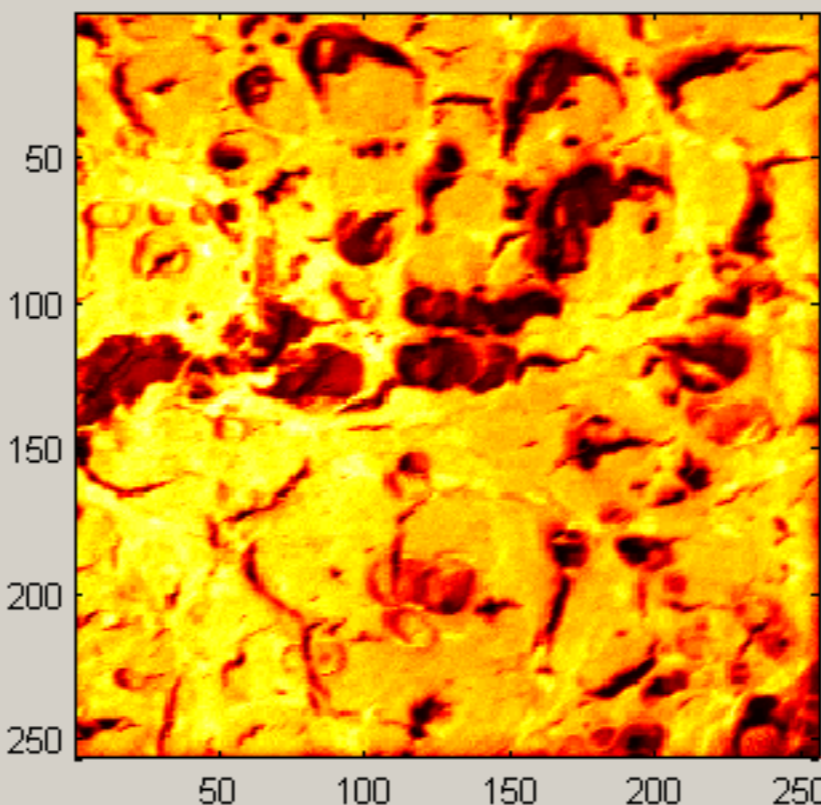
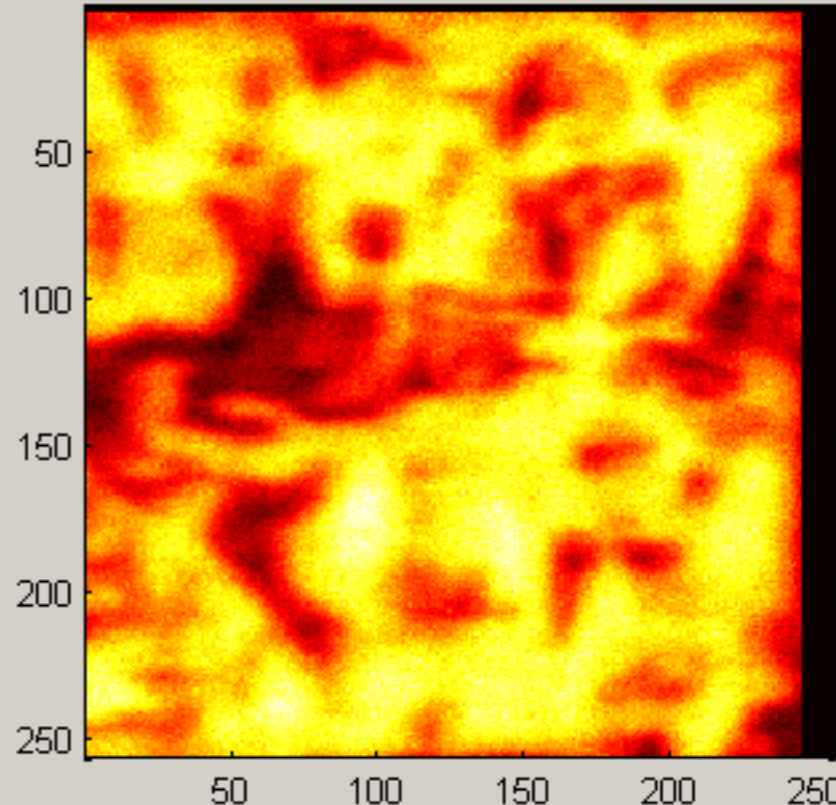
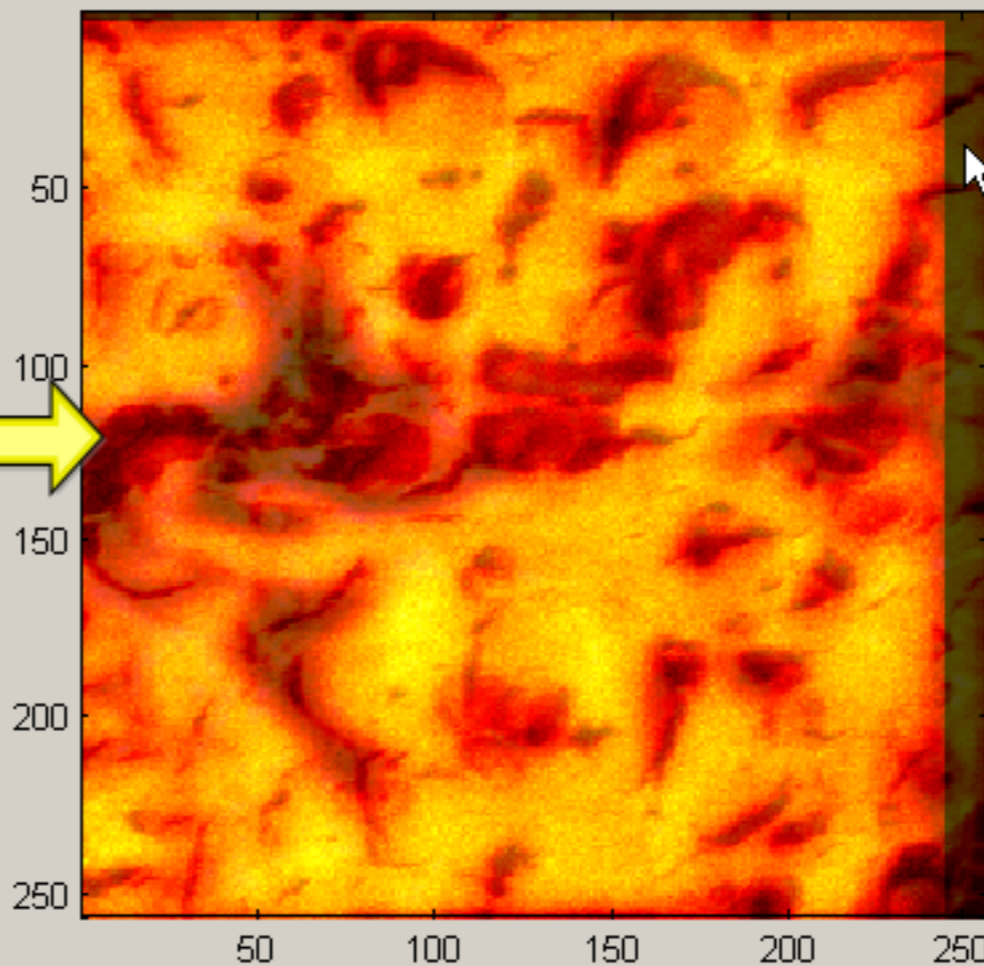


image 2



Overlay Image 2 / image 1



Export

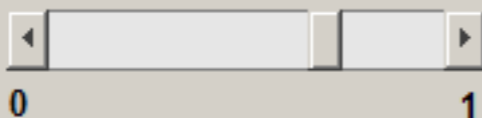
Export/Crop

Close

Col 14

Row 4

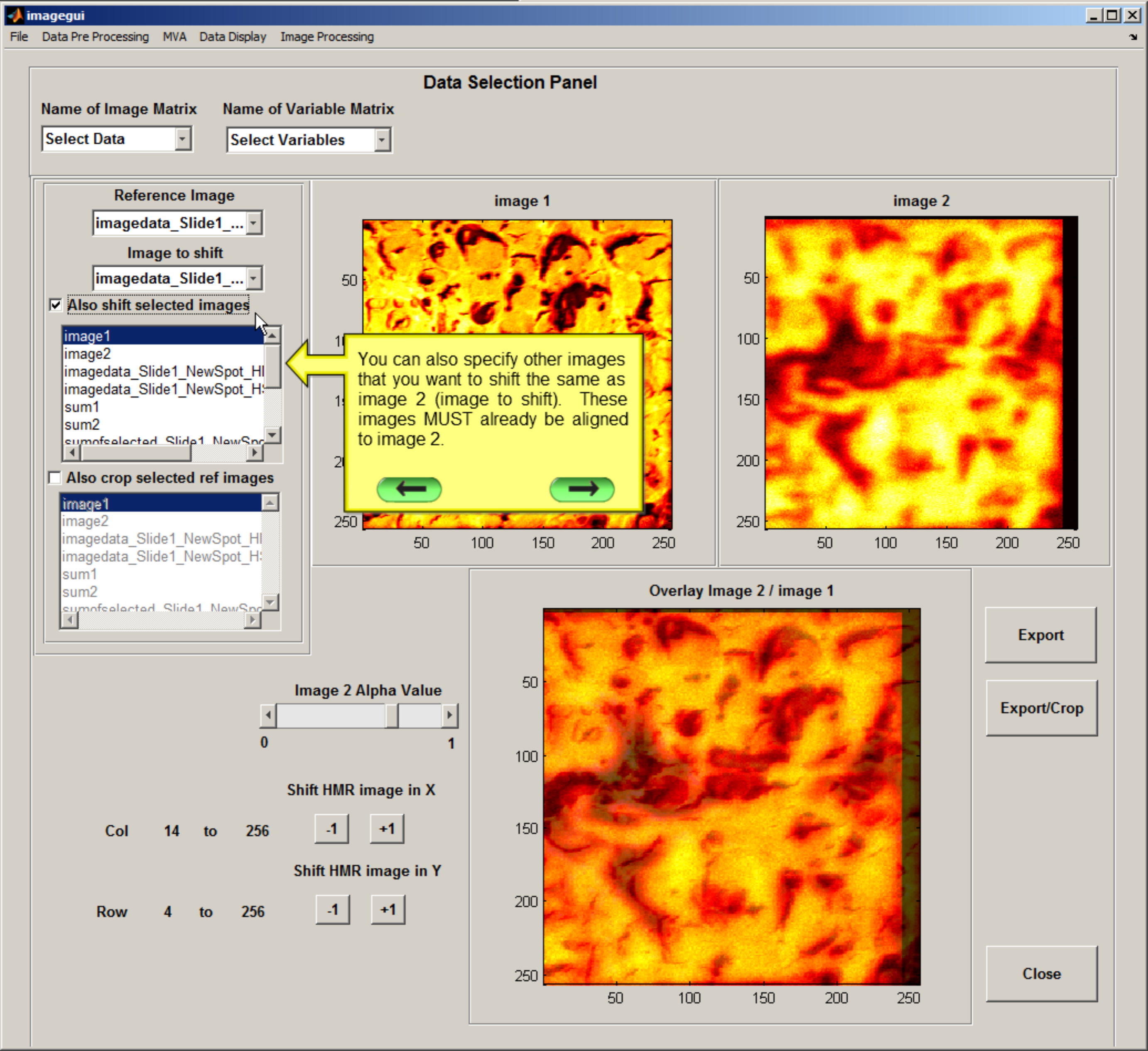
Image 2 Alpha Value

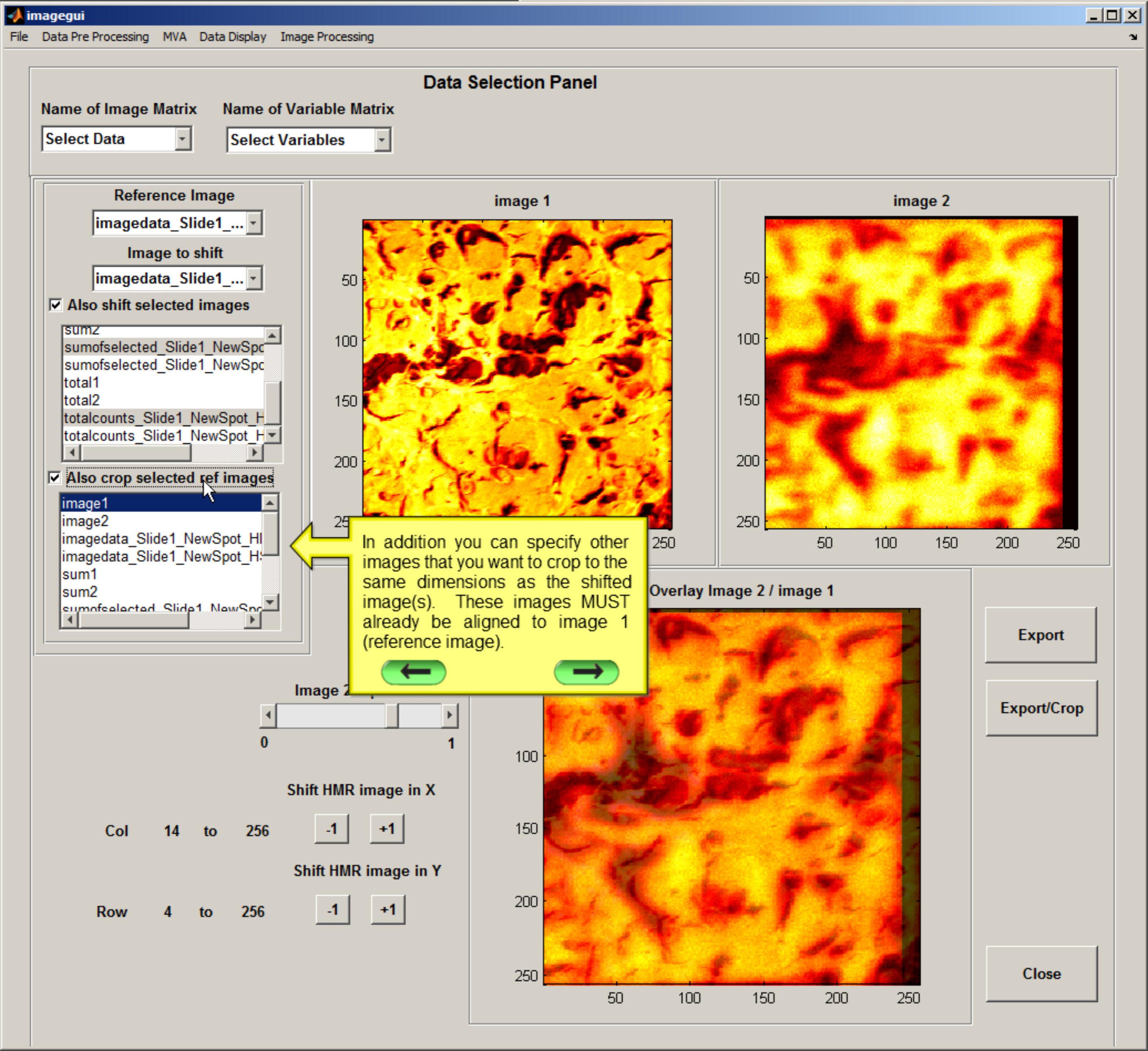


You can see that the image has shifted and that the features now overlap.

Since this is a manual alignment, there will be some error in the overlay, however it should not be off by more than a few microns.







Data Selection Panel

Name of Image Matrix

Name of Variable Matrix

Select Data

Select Variables

Reference Image

imagedata_Slide1_...

Image to shift

imagedata_Slide1_...

☒ Also shift selected images

sum2
sumofselected_Slide1_NewSp
sumofselected_Slide1_NewSp
total1
total2
totalcounts_Slide1_NewSpot H
totalcounts_Slide1_NewSpot H

☒ Also crop selected ref images

sum2
sumofselected_Slide1_NewSpot
sumofselected_Slide1_NewSpot
total1
total2
totalcounts_Slide1_NewSpot H
totalcounts_Slide1_NewSpot H

image 1

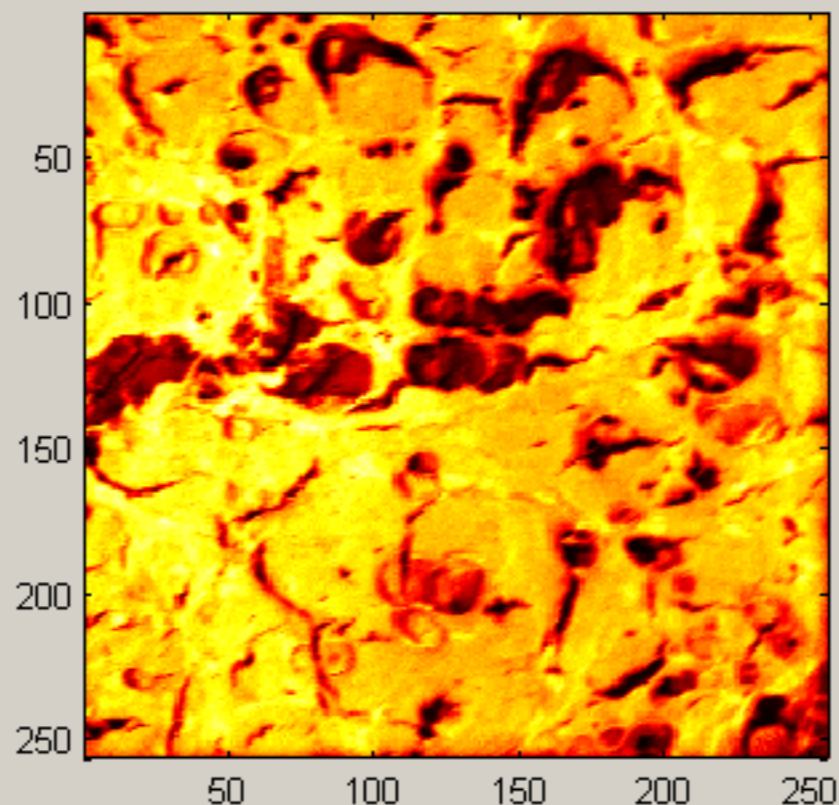
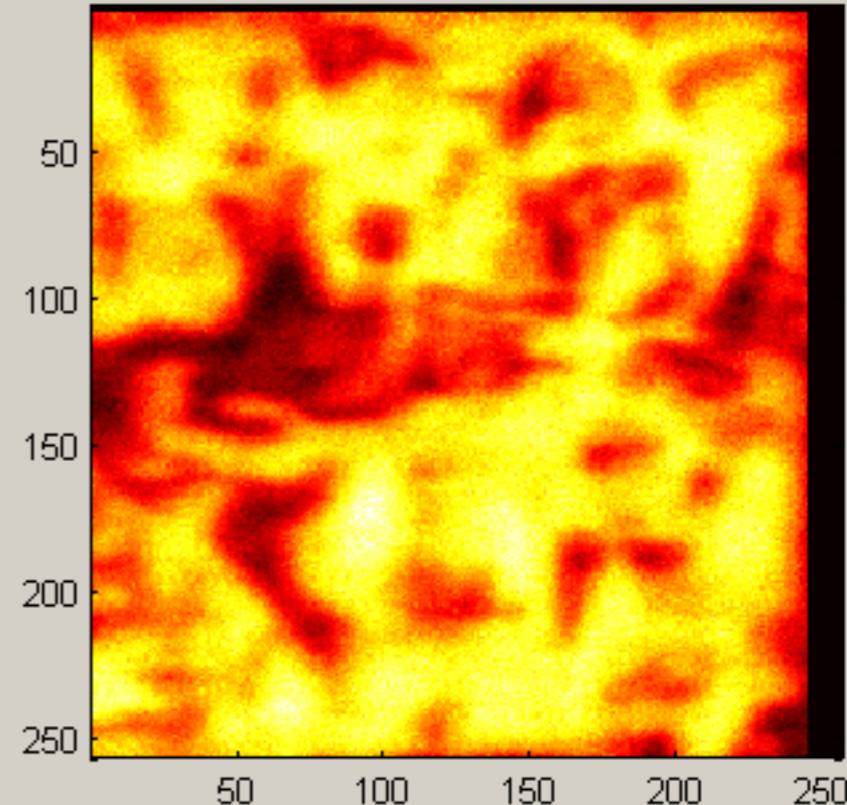
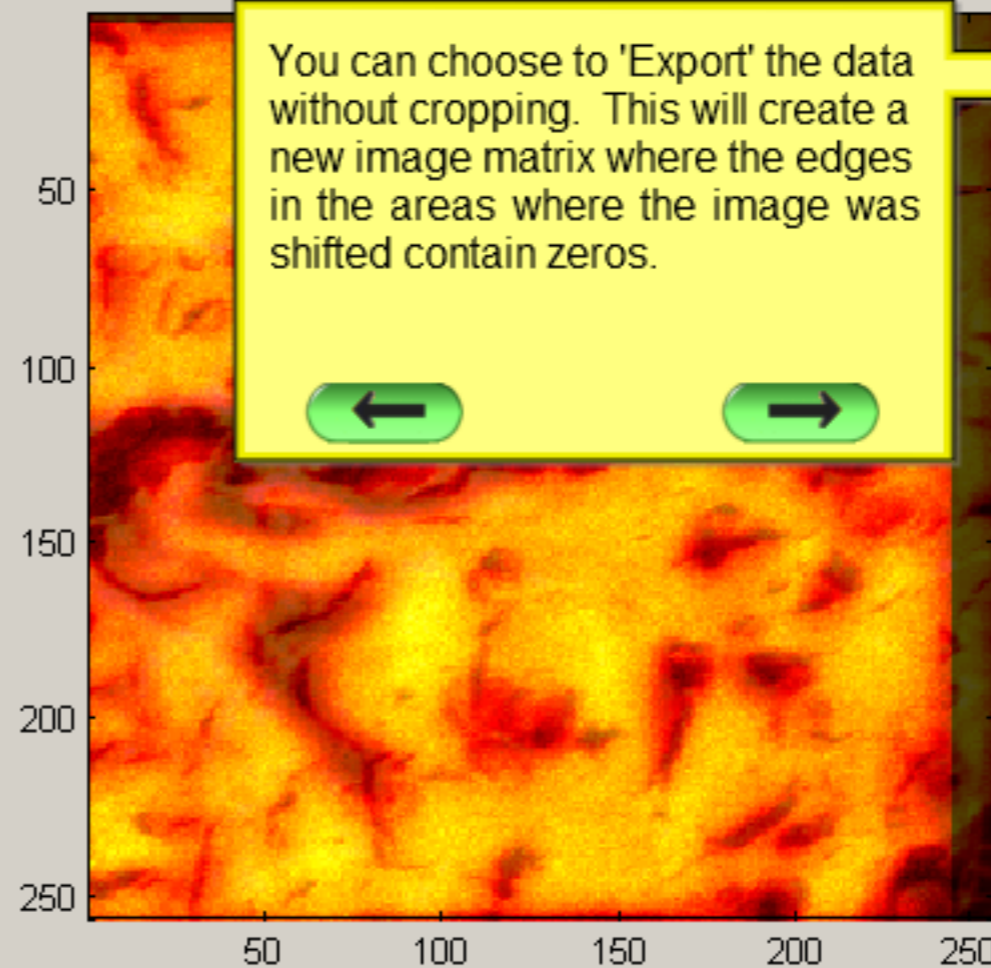


image 2



Overlay Image 2 / image 1

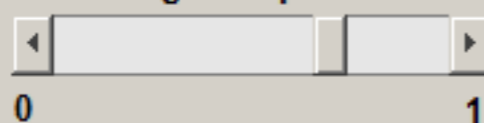


Export

Export/Crop

Close

Image 2 Alpha Value



Shift HMR image in X

Col 14 to 256

-1

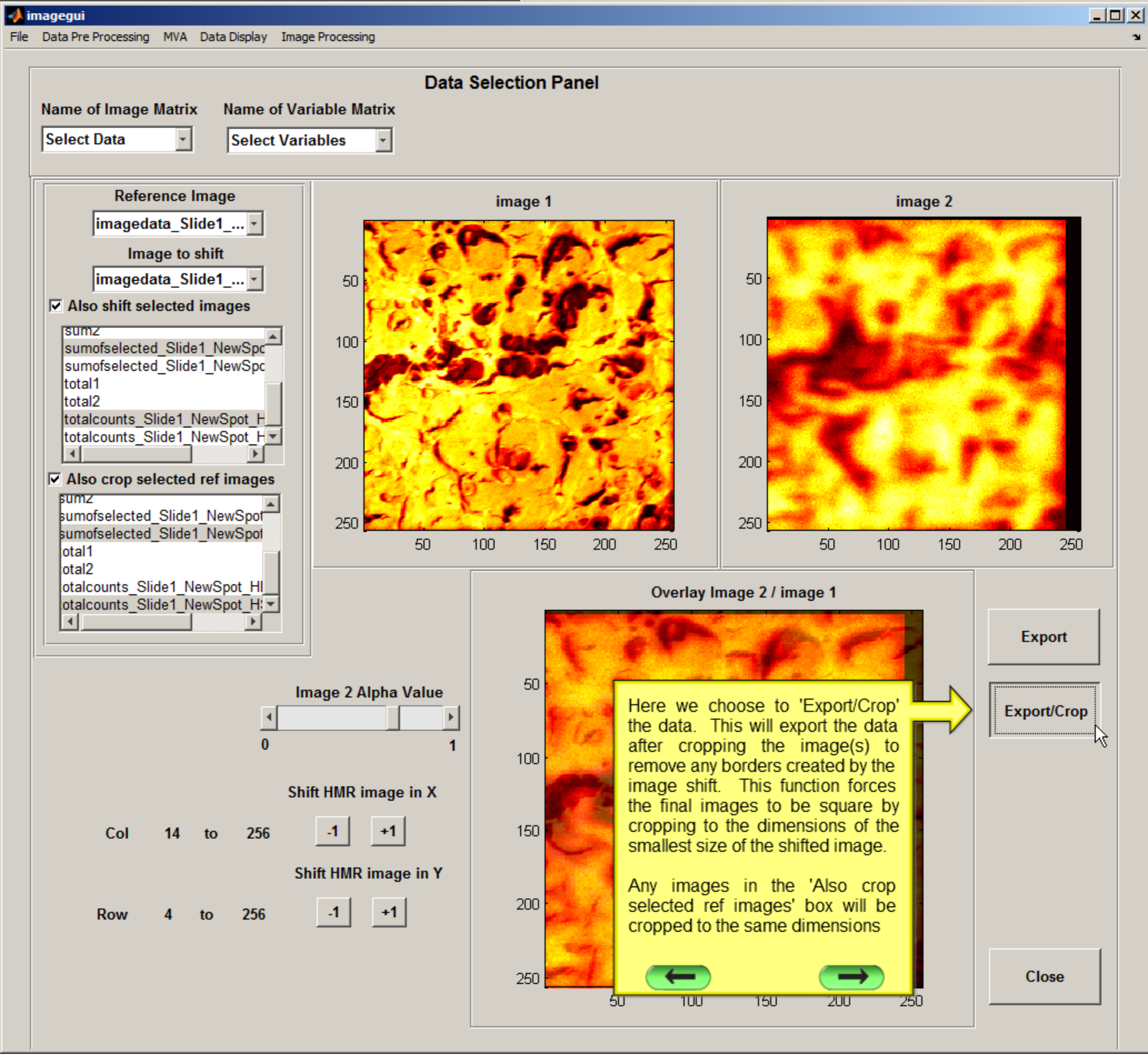
+1

Shift HMR image in Y

Row 4 to 256

-1

+1



Current Folder		Workspace	
		Stack: Base	Select data to plot
Name		Value	
exactmass_Slide1_NewSpot_HMR_06		<193x8 char>	
exactmass_Slide1_NewSpot_HSRDP_06c		<104x8 char>	
headerinfo_Slide1_NewSpot_HMR_06		<195x4 double>	
headerinfo_Slide1_NewSpot_HSRDP_06c		<106x4 double>	
image1		<65536x104 double>	
image2		<65536x193 double>	
imagedata_Slide1_NewSpot_HMR_06		<65536x193 double>	
imagedata_Slide1_NewSpot_HMR_06_ShiftedCropped		<59049x193 double>	
imagedata_Slide1_NewSpot_HSRDP_06c		<65536x104 double>	
imagedata_Slide1_NewSpot_HSRDP_06c_Cropped		<59049x104 double>	
sum1		<65536x1 double>	
sum2		<65536x1 double>	
sumofselected_Slide1_NewSpot_HMR_06		<65536x1 double>	
sumofselected_Slide1_NewSpot_HMR_06_ShiftedCropped		<59049x1 double>	
sumofselected_Slide1_NewSpot_HSRDP_06c		<65536x1 double>	
sumofselected_Slide1_NewSpot_HSRDP_06c_Cropped		<59049x1 double>	
total1		<65536x1 double>	
total2		<65536x1 double>	
totalcounts_Slide1_NewSpot_HMR_06		<65536x1 double>	
totalcounts_Slide1_NewSpot_HMR_06_ShiftedCropped		<59049x1 double>	
totalcounts_Slide1_NewSpot_HSRDP_06c		<65536x1 double>	
totalcounts_Slide1_NewSpot_HSRDP_06c_Cropped		<59049x1 double>	

Command Window

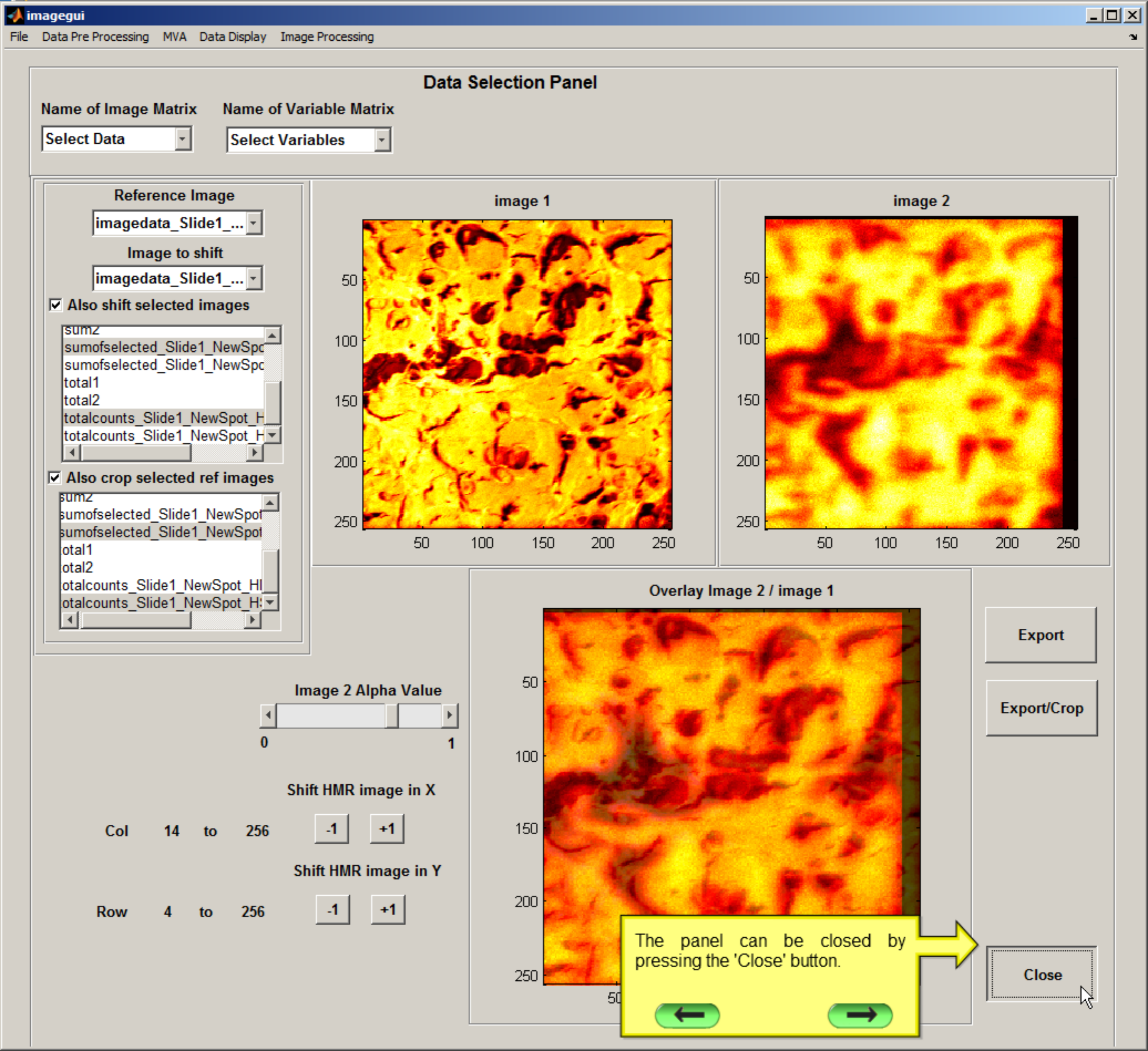
New to MATLAB? Watch this [Video](#), see [Demos](#), or read [Getting Started](#).

fx >>

Here you can see the data that has been added to the workspace. The new data is renamed according to the process carried out (i.e. 'Cropped', or 'ShiftedCropped').

Command History

```
what
load nickforROIExtraction
clear;clc
what
load nick_2012_10_18_slice2spot2_testusingHSRtotal
clear
load imagealignerfulldataset
clc
imagegui
clear;clc
load imagealignerfulldataset
clear;clc
```



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

exactmass_Slide1_NewSpot_HMR_06
exactmass_Slide1_NewSpot_HSRDP_06c
headerinfo_Slide1_NewSpot_HMR_06
headerinfo_Slide1_NewSpot_HSRDP_06c
image1
image2
imagedata_Slide1_NewSpot_HMR_06
imagedata_Slide1_NewSpot_HMR_06_ShiftedCrop
imagedata_Slide1_NewSpot_HSRDP_06c
imagedata_Slide1_NewSpot_HSRDP_06c_Croppe
sum1
sum2
sumofselected_Slide1_NewSpot_HMR_06
sumofselected_Slide1_NewSpot_HMR_06_ShiftedC
sumofselected_Slide1_NewSpot_HSRDP_06c
sumofselected_Slide1_NewSpot_HSRDP_06c_Crop
total1
total2
totalcounts_Slide1_NewSpot_HMR_06
totalcounts_Slide1_NewSpot_HMR_06_ShiftedCrop
totalcounts_Slide1_NewSpot_HSRDP_06c
totalcounts_Slide1_NewSpot_HSRDP_06c_Croppe

Data

Add to Image List

Add to Variable List

Add to Image Overlay List

If you want to further process the new images in the Imagegui, you must first load them from the workspace (see tutorial 02 on Importing data).

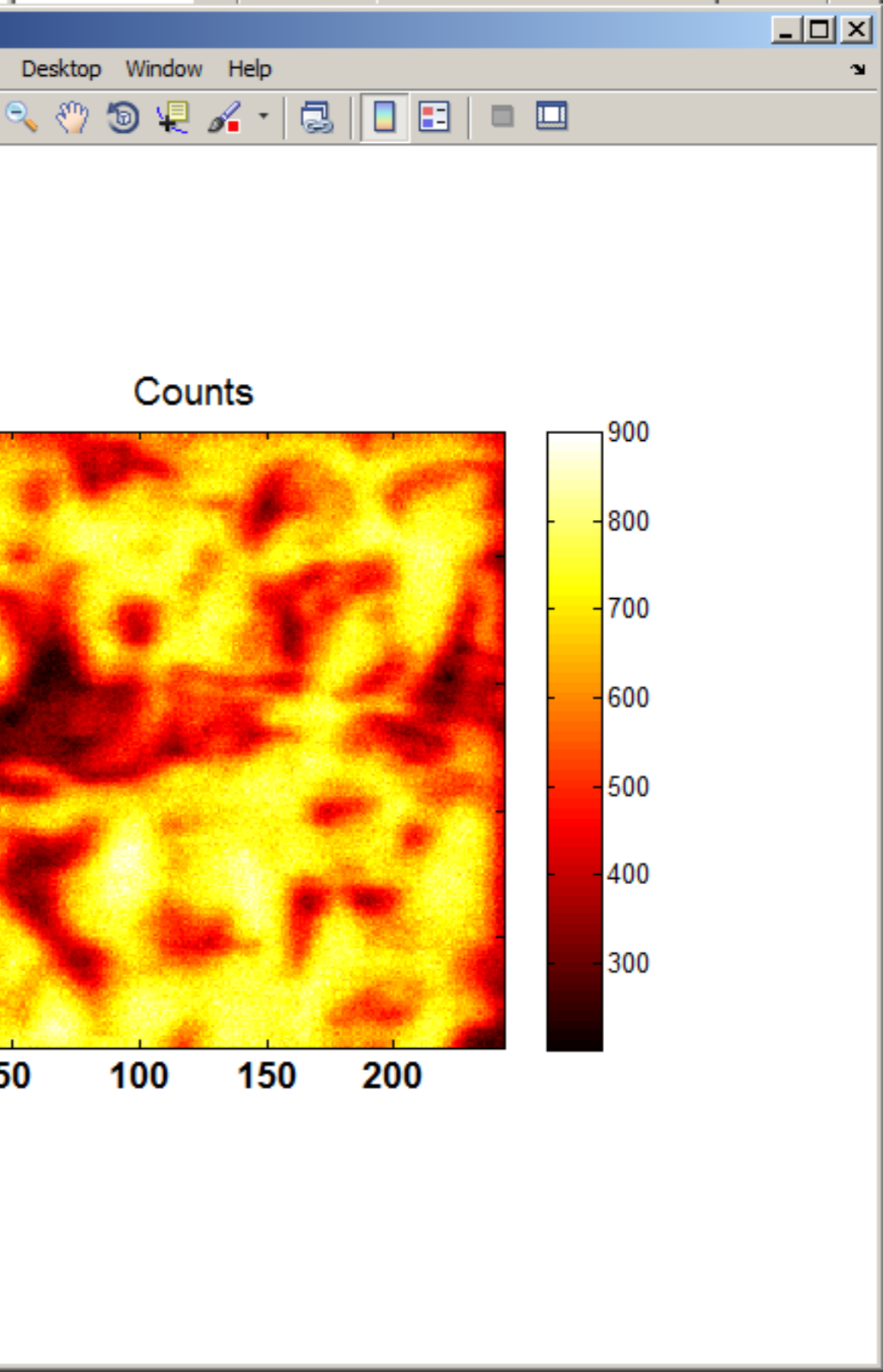
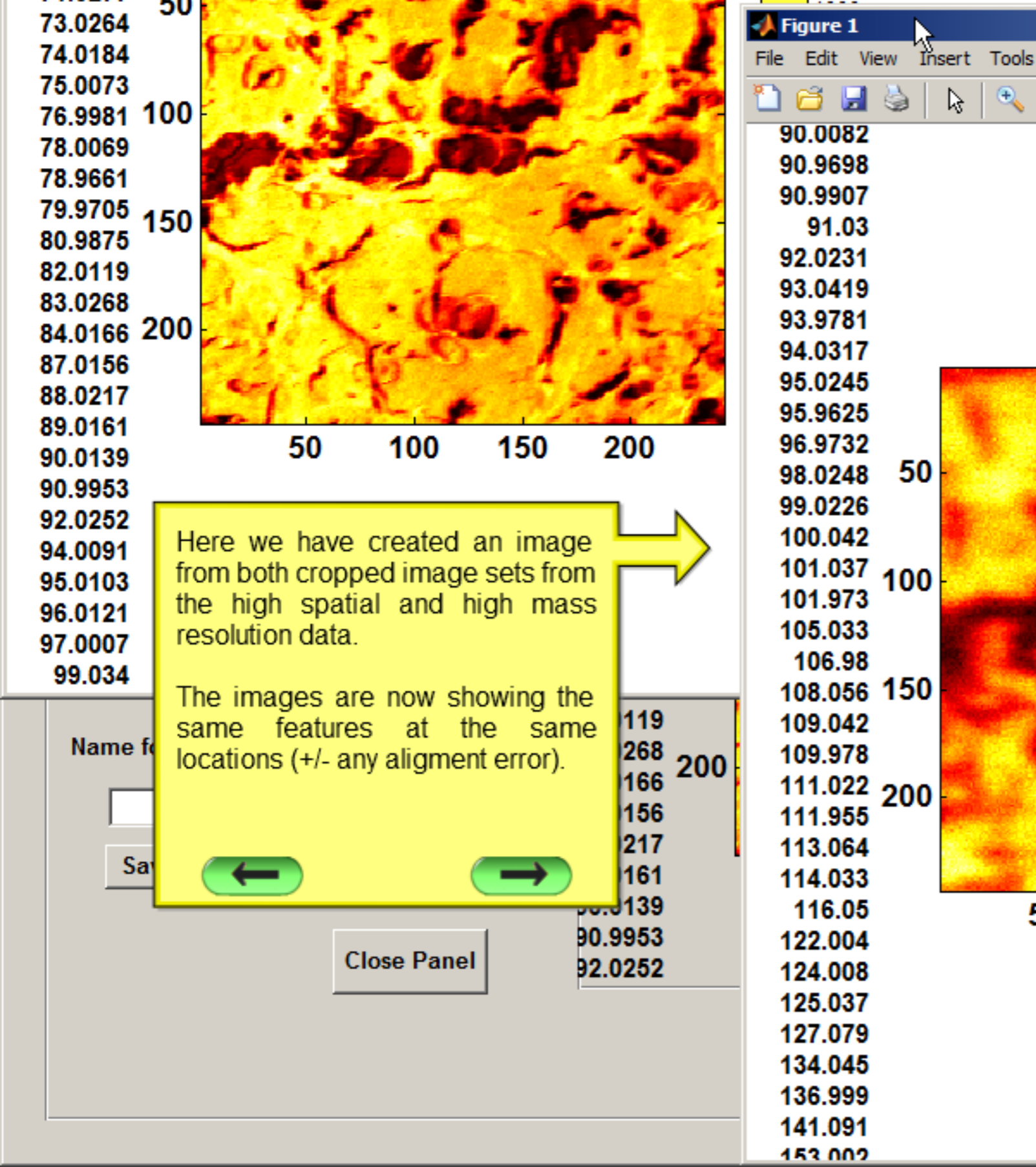
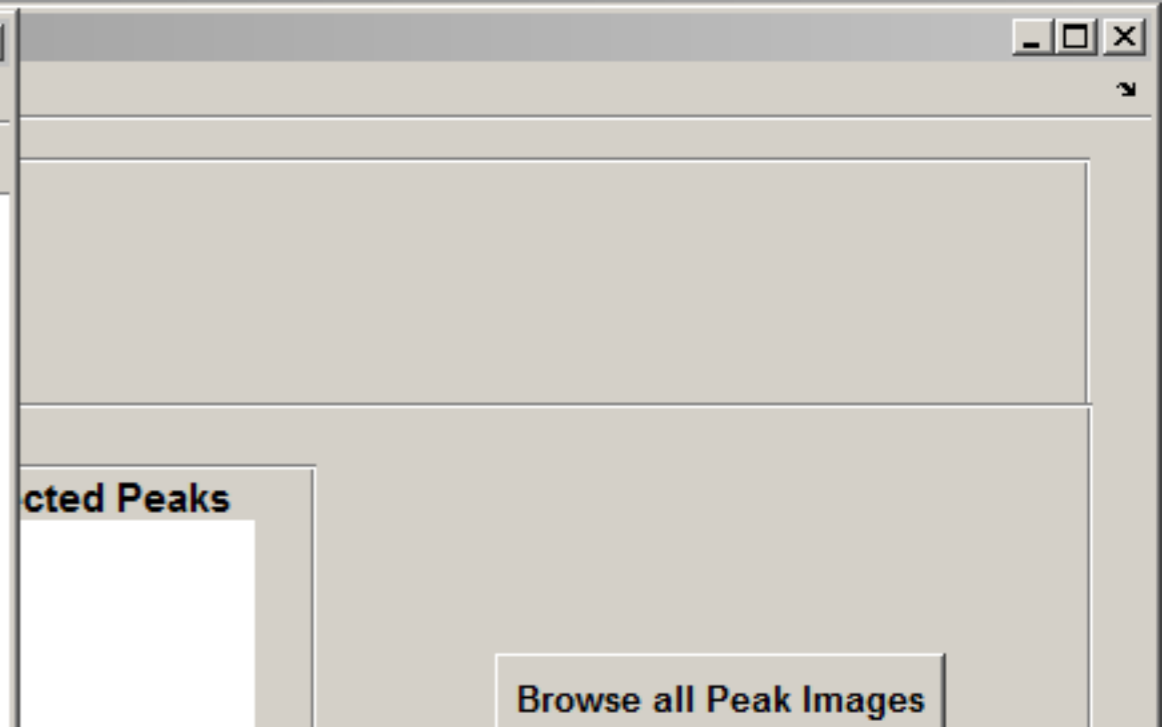
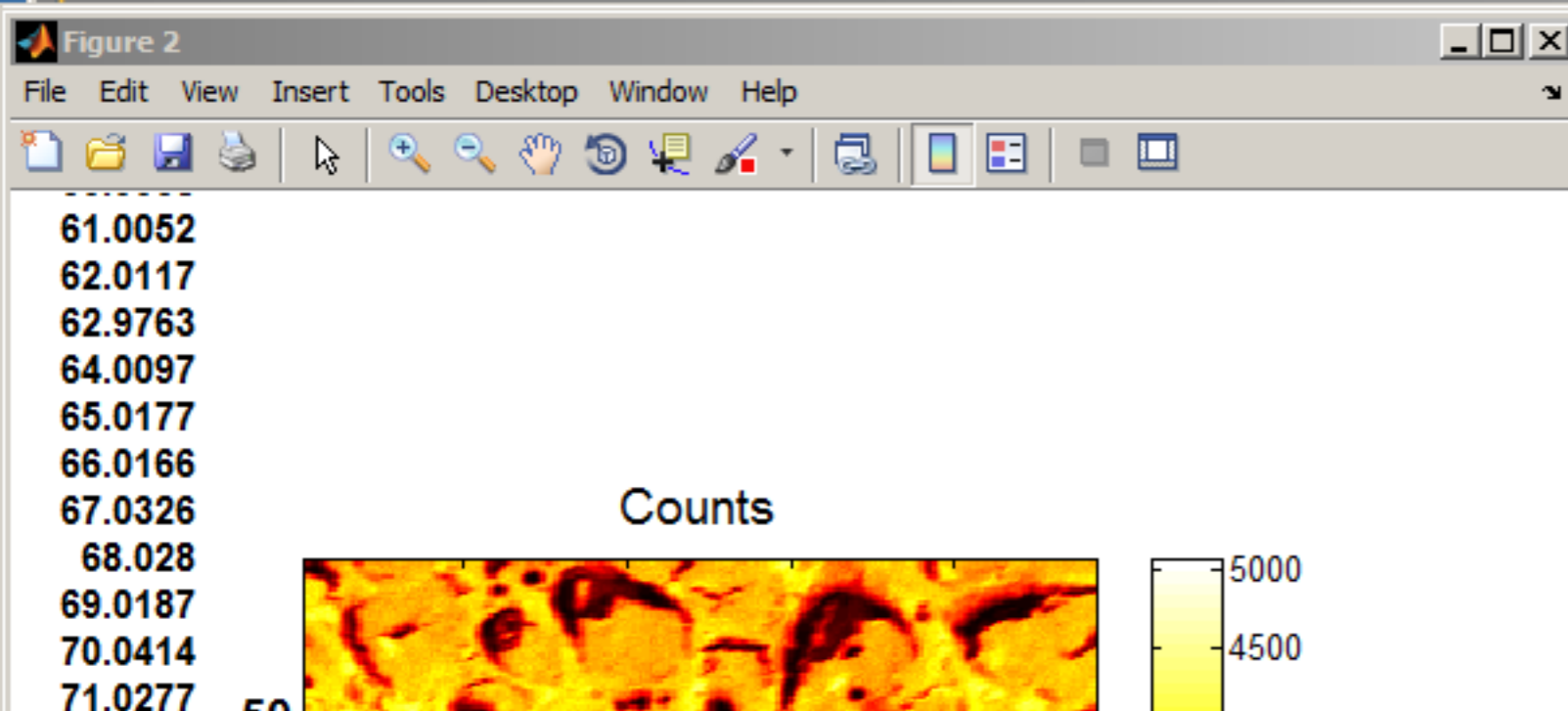


Add to MAF Scores List

Add to MAF Loadings List

Add to MAF Variance List

Close Panel



Data Selection Panel

Name of Image Matrix

imagedata_Slid...

Name of Variable Matrix

exactmass_Slide1...

That's it for this tutorial.

Press the green button on the left to go back to the previous step. Press the button the right to go back to the beginning of the tutorial.

