

# **MyBox: Easy Tools Set User Guide – Image Tools**

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## 1 Resource Addresses

This is GUI(Graphic User Interface) program developed in JavaFx, whose target is to provide simple and easy tools . It is free and open sources, and its main page is following:

<https://github.com/Mararsh/MyBox>

Source codes, compiled packages, and documents are under Releases directory:

<https://github.com/Mararsh/MyBox/releases>

Welcome to submit software requirements and problem reports online:

<https://github.com/Mararsh/MyBox/issues>

Cloud storage:

[https://pan.baidu.com/s/1fWMRzym\\_jh075OCX0D8y8A#list/path=%2F](https://pan.baidu.com/s/1fWMRzym_jh075OCX0D8y8A#list/path=%2F)

## 2 Documents

This document introduces Image Tools of MyBox. It can be download from following address:

<https://github.com/Mararsh/MyBox/releases/download/v5.0/MyBox-UserGuide-5.0-ImageTools-en.pdf>

Other documents include:

“MyBox User Guide – Overview”

[https://github.com/Mararsh/MyBox/releases/download/v5.0/MyBox-UserGuide-5.0-Overview\\_en.pdf](https://github.com/Mararsh/MyBox/releases/download/v5.0/MyBox-UserGuide-5.0-Overview_en.pdf)

“MyBox User Guide – PDF Tools”

<https://github.com/Mararsh/MyBox/releases/download/v5.0/MyBox-UserGuide-5.0-PdfTools-en.pdf>

“MyBox User Guide – Desktop Tools”

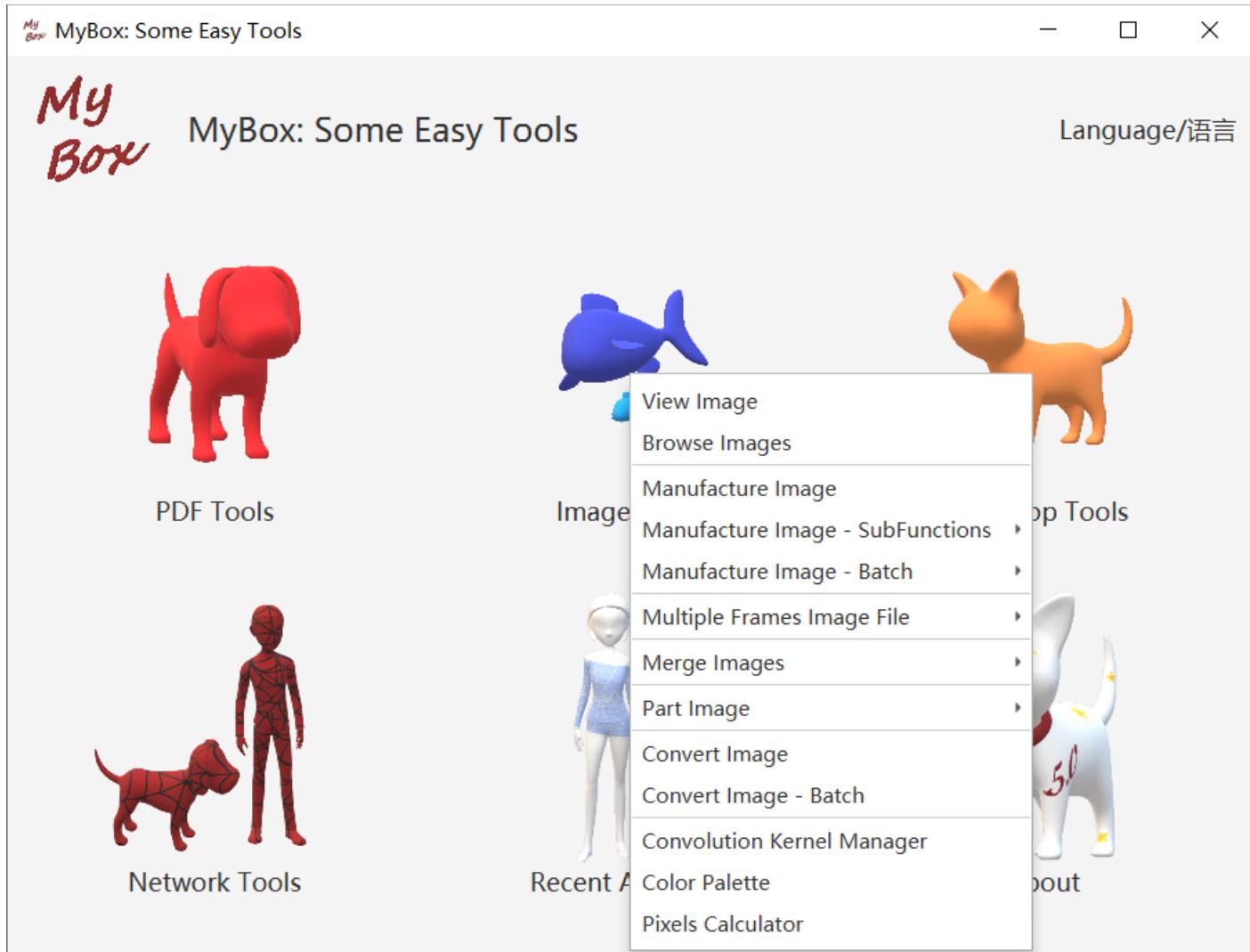
<https://github.com/Mararsh/MyBox/releases/download/v5.0/MyBox-UserGuide-5.0-DesktopTools-en.pdf>

“MyBox User Guide – Network Tools”

<https://github.com/Mararsh/MyBox/releases/download/v5.0/MyBox-UserGuide-5.0-NetworkTools-en.pdf>

### 3 Menu of Image Tools

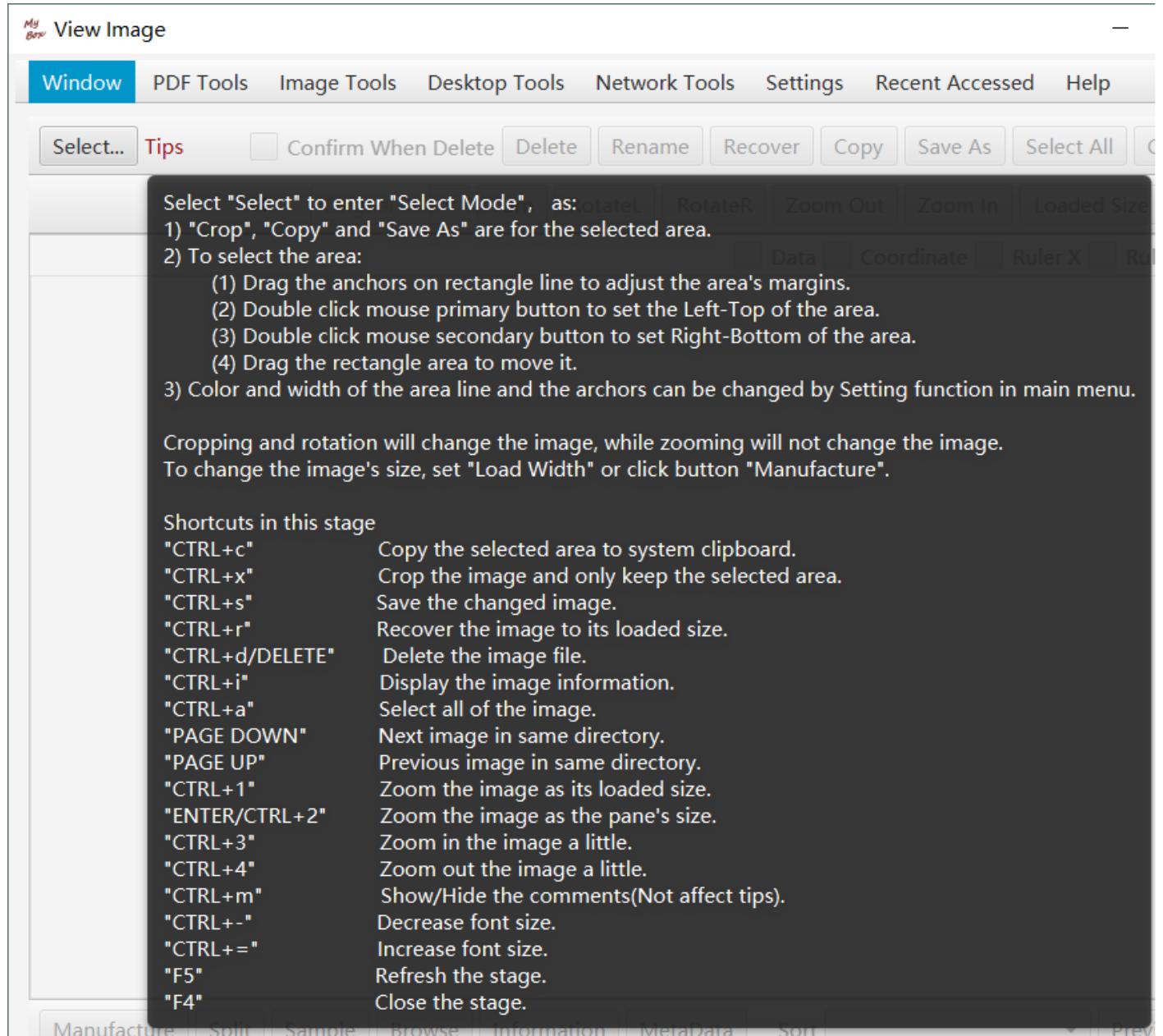
In main interface of MyBox, move mouse upon the icon “Image Tools” to pop the menu:



## 4 View Image

### 4.1 Tips

Move mouse upon the red label “Tips” in left top corner, and information will be popped:



## 4.2 Shortcuts

Shortcuts in this interface include:

"CTRL+c"	Copy the selected area to system clipboard.
"CTRL+x"	Crop the image and only keep the selected area.
"CTRL+s"	Save the changed image.
"CTRL+r"	Recover the image to its loaded size.
"CTRL+d/DELETE"	Delete the image file.
"CTRL+i"	Display the image information.
"CTRL+a"	Select all of the image.
"PAGE DOWN"	Next image in same directory.
"PAGE UP"	Previous image in same directory.
"CTRL+1"	Zoom the image as its loaded size.
"ENTER/CTRL+2"	Zoom the image as the pane's size.
"CTRL+3"	Zoom in the image a little.
"CTRL+4"	Zoom out the image a little.
"CTRL+m"	Show/Hide the comments(Not affect tips).
"CTRL+-"	Decrease font size.
"CTRL+="	Increase font size.
"F5"	Refresh the stage.
"F4"	Close the stage.

## 4.3 About Image Size

User can set “Load Width” to select “Orginal Size” or defined width to read scaled image. With loaded size, large/small image can be scaled in memory and displayed in screen.

Loaded size is different from zooming in interface. Loaded pixels determine memory usage, while interface zooming only affect pixels in screen.

The following concepts are different:

“Orginal Size”: pixels number saved in image file.

“Loaded Size”: pixels number in memory which can be changed by Load/Crop/Transform.

“Display Size”: pixels number in screen after user zooms image in interface.

“Selected Size”: screen area selected by user, which will be mapped to memory area and calculated according to scale ratio of orginal size.

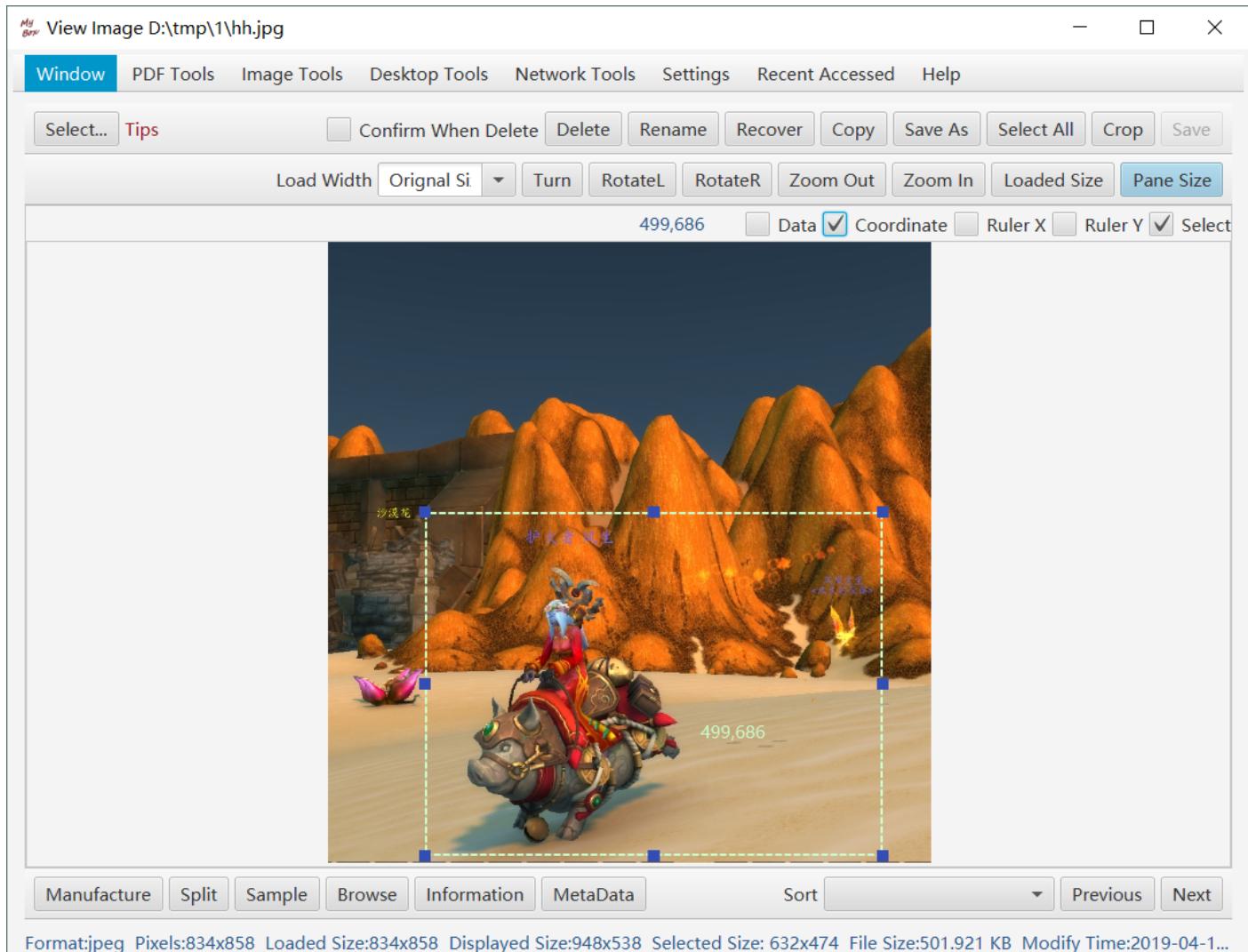
Example, an image has original size 1000x500, loaded size 800x400, display size 600x300, and selected size 700x200.

## 4.4 Selection Mode

When “Select” is checked, tool enters “Selection Mode”:

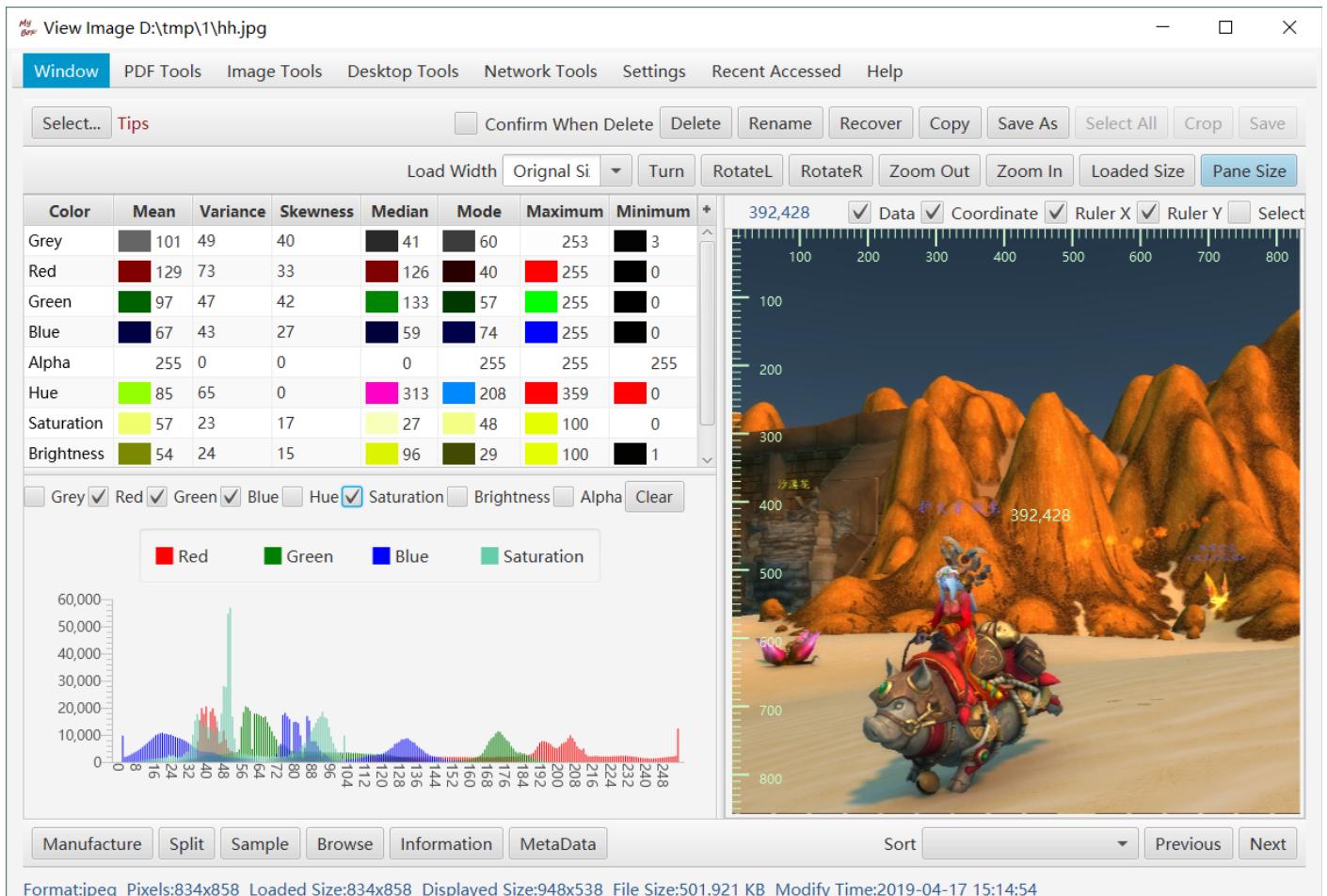
1. A dotted rectangle line with anchors appears on the image. Adjust the selected area by dragging the anchors. Or double left click to set left-top corner and double right click to set right-bottom corner.
2. Button “Select All”(CTRL+a).
3. Copy/Crop/Save-As are against the selected area.

When “Select” is not checked, tool is in “Whole Image Mode” that Copy/Save-As are against the whole image.



## 4.5 Coordinate / Rulers / Data

User can select whether show coordinate, rulers, or data for current image:



## 4.6 Crop / Rotate / Recover / Save / Copy

After image is Cropped(CTRL+x) or rotated, modification can be saved(CTRL+s) to cover original image file, or be saved as another image file, or be copied(CTRL+c) into system clipboard. Button “Recover”(CTRL+r) is to discard modification and load back original image.

When image is modified, a “\*\*” will be appended in interface title.

## 4.7 Navigation

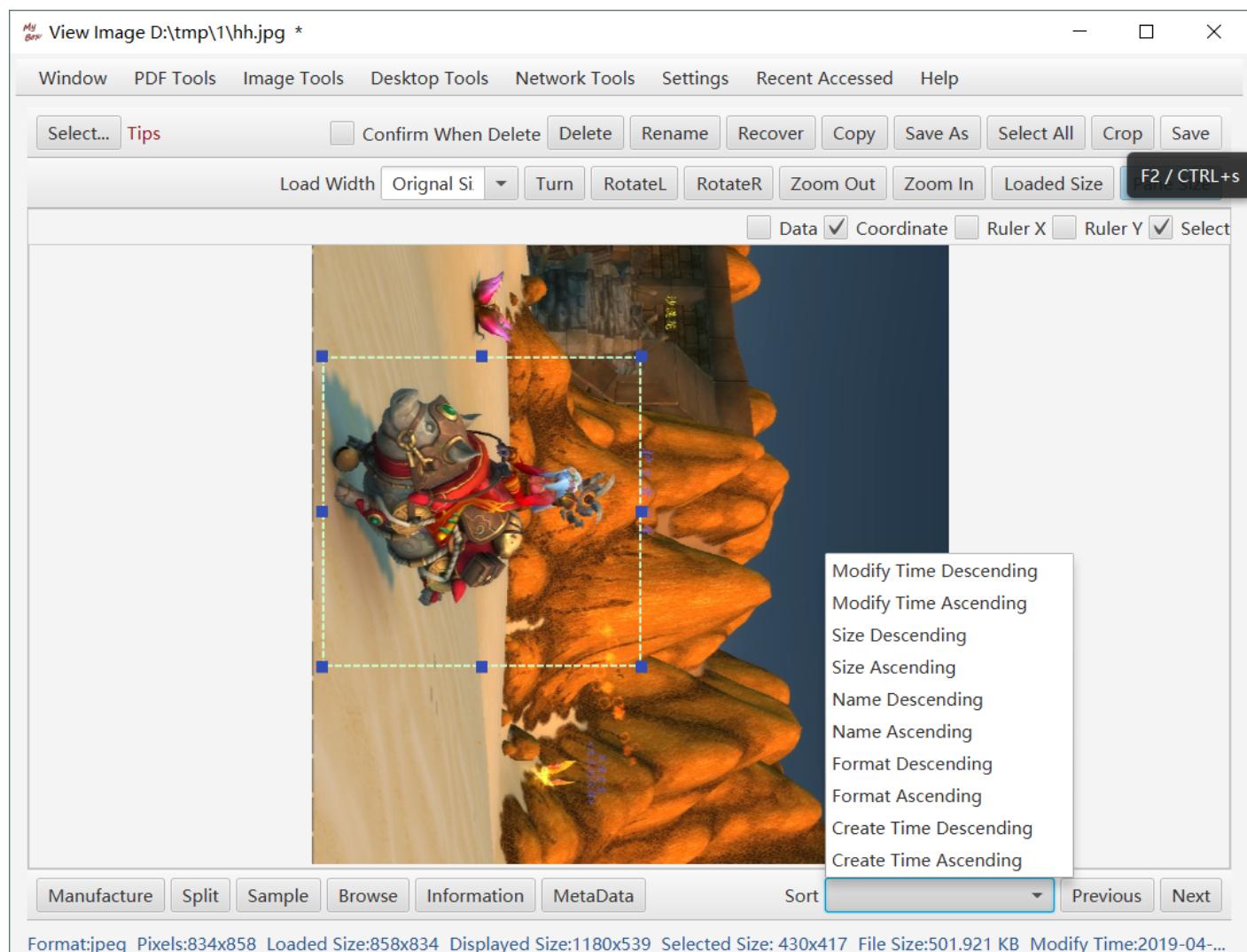
There are navigation buttons in right bottom of interface to go to other files in same directory. Multiple sort modes of files can be choiced.

## 4.8 Rename / Delete

When current image file is deleted(DELETE/CTRL+d), next image file of same directory will be loaded.

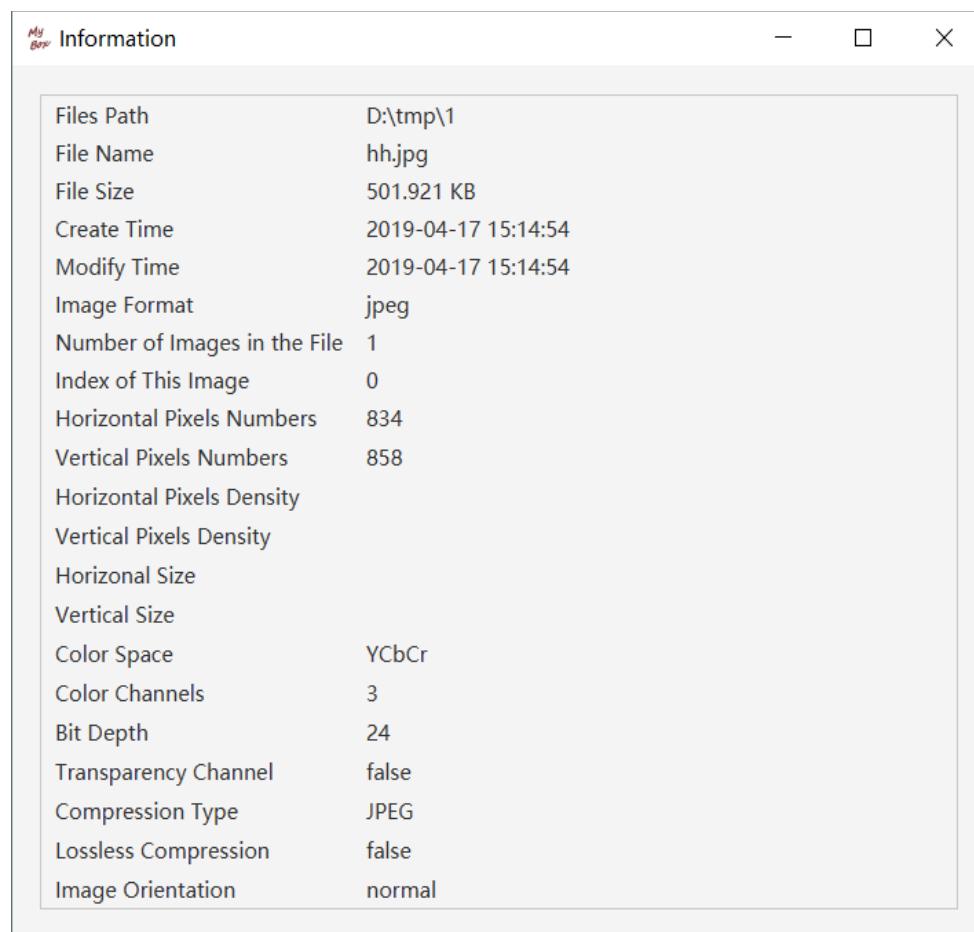
Current image file can be renamed.

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## 4.9 Image Information and Meta

Click button “Information” to pop the window to show image's attributes:



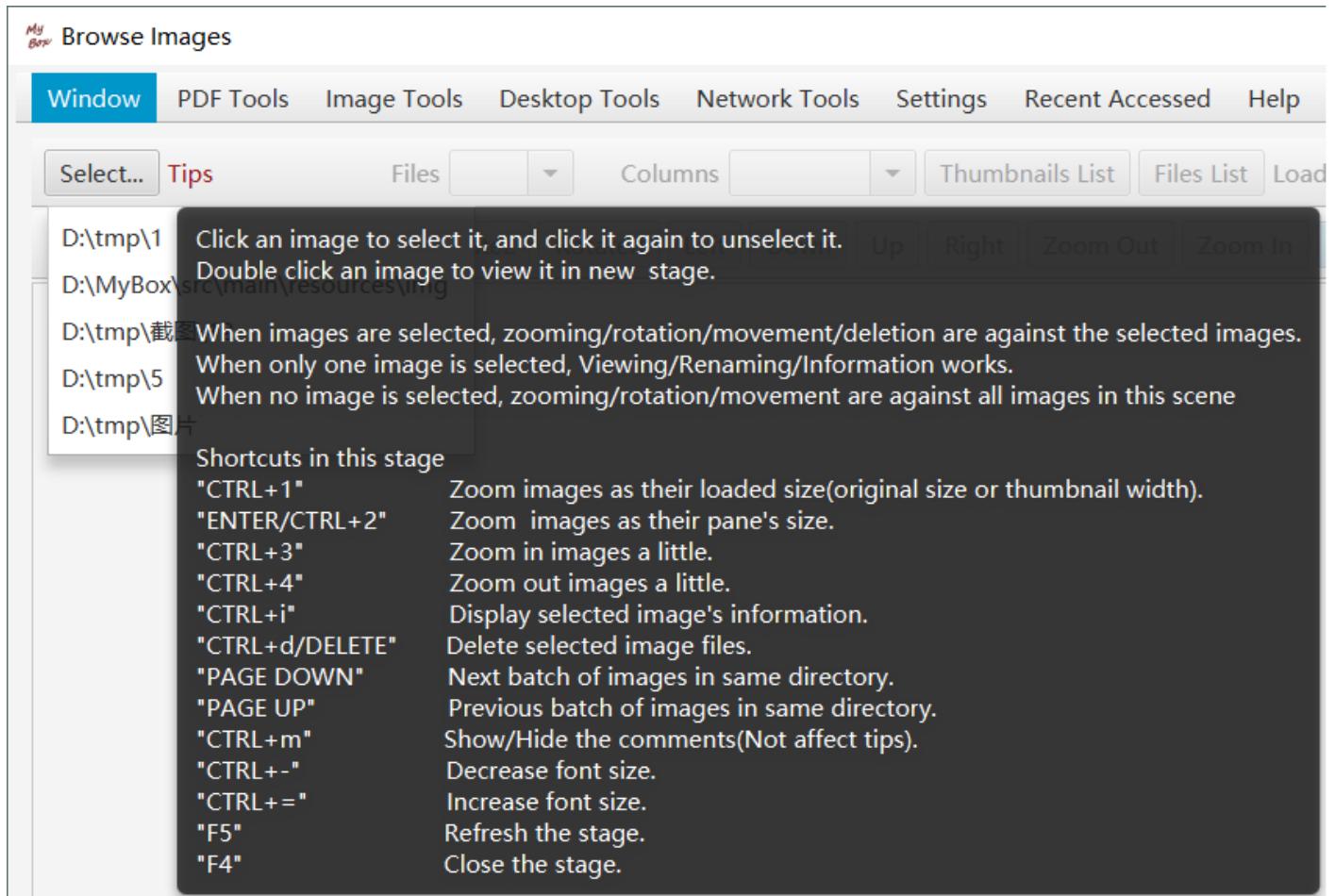
Click button “MetaData” to pop the window to show image's meta in XML format:



## 5 Browse Images

### 5.1 Tips

Move mouse upon the red label “Tips” to show the information:



### 5.2 Shortcuts

Shortcuts in this interface include:

"CTRL+1"	Zoom images as their loaded size(original size or thumbnail width).
"ENTER/CTRL+2"	Zoom images as their pane's size.
"CTRL+3"	Zoom in images a little.
"CTRL+4"	Zoom out images a little.
"CTRL+i"	Display selected image's information.
"CTRL+d/DELETE"	Delete selected image files.
"PAGE DOWN"	Next batch of images in same directory.
"PAGE UP"	Previous batch of images in same directory.
"CTRL+m"	Show/Hide the comments(Not affect tips).
"CTRL+-"	Decrease font size.

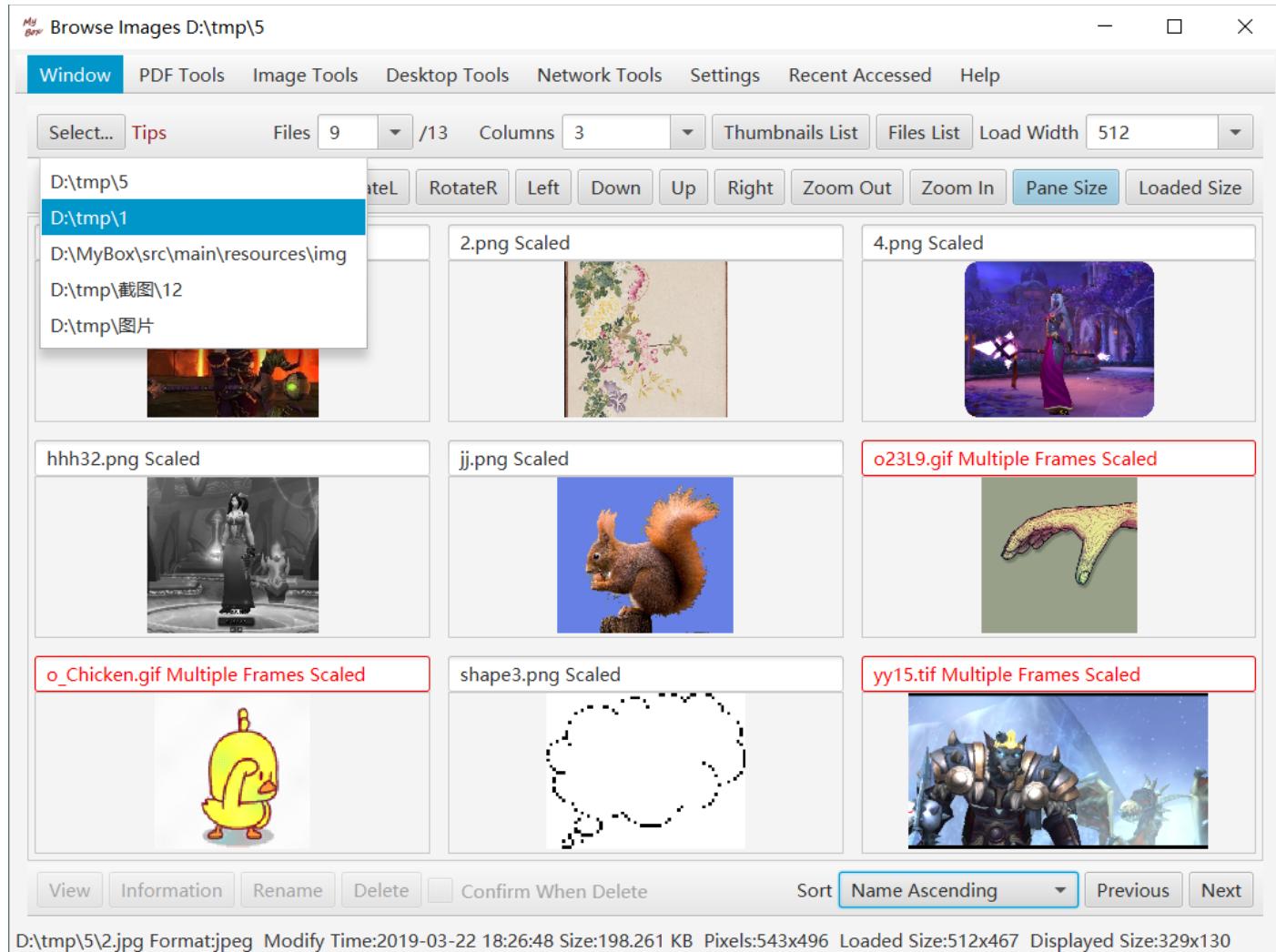
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"CTRL+="	Increase font size.
"F5"	Refresh the stage.
"F4"	Close the stage.

### 5.3 Open Images

Move mouse upon button “Select...”, and a list of recently visited image directories will be popped. Select multiple image files to display them in same screen.

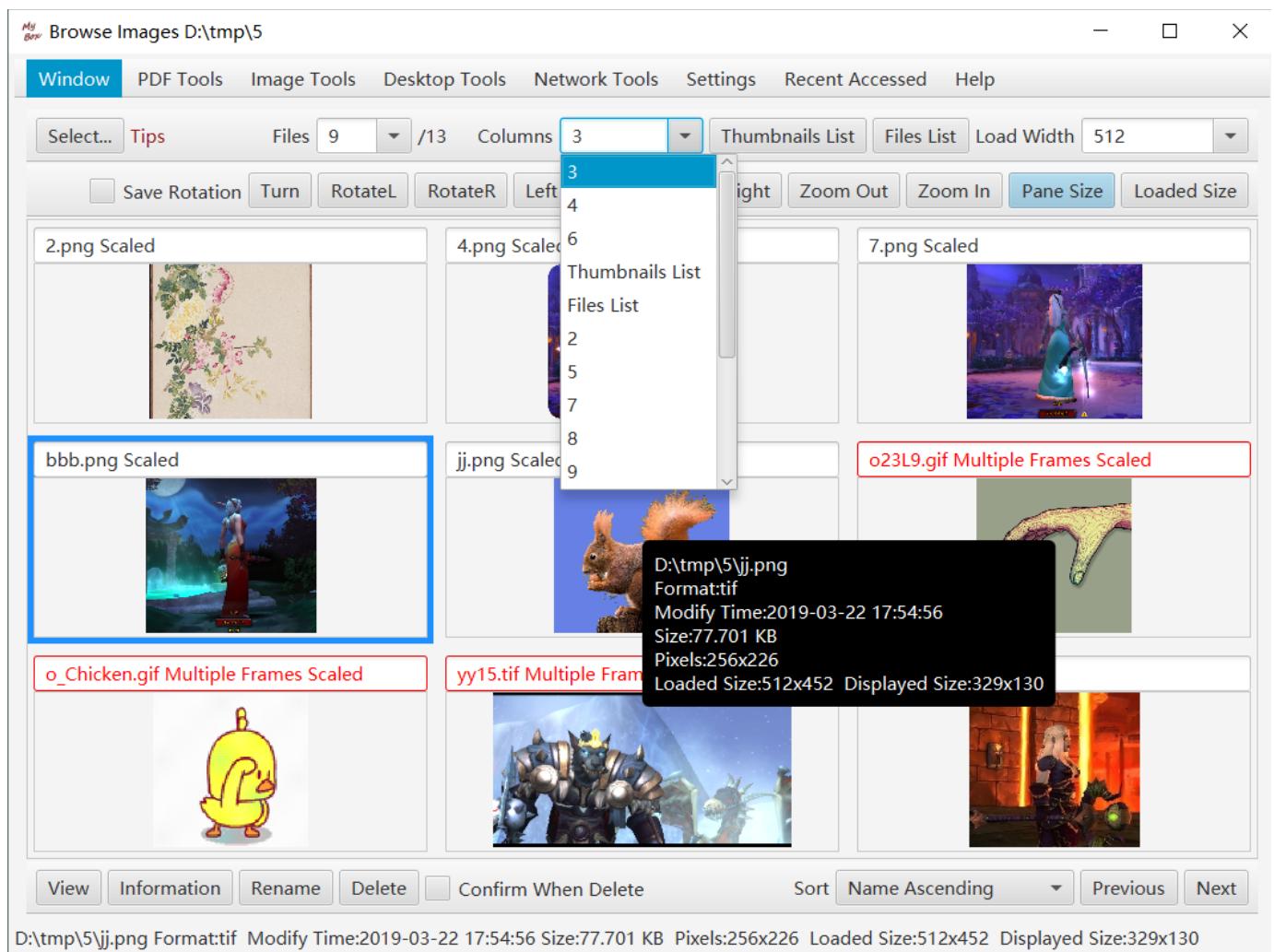
There are navigation buttons in right-bottom corner to load other batch of images in same directory.



## 5.4 Thumbnails Grid Mode

When images are loaded, tool is in “Thumbnails Grid Mode” by default:

1. “Files number” can be set to add or delete some images in the grid.
2. “Columns number” can be set to adjust the displayed size of images in the screen.
3. “Load Width” can be set to determine pixels number in memory. “Original Size” is one choice.
4. Click a image to make it selected and click it again to make it deselected. Multiple images can be selected.
5. Double click a image to view it in new window.
6. Move mouse upon a image and its summary will be popped and disappear in 1 second. Summary is shown in bottom label too.
7. Title of multiple-frames image or sampled image is in red.
8. If loaded size of a image is different from its original size, its title is ended with “Scaled”.
9. When “Save Rotation” is checked, rotation will be saved automatically and original file will be covered directly.
10. If no image is selected, rotation/zomming/movement are against all images in the screen. If some images are selected, operations are against the selected images.
11. When only one image is selected, buttons Rename/Information/View work. Deletion is against selected images.



## 5.5 Thumbnails List Mode

Click button “Thumbnails List” or select the item from “Columns” to enter this mode:

1. All loaded image files are displayed in table, all with width of 100 pixels.
2. Click headers to sort the list.
3. Click “+” in the right-top corner of the table to select columns to be displayed.
4. Double click a row to view the image in popped window.
5. Select multiple rows to delete or rotate.
6. Select one row to rename the file, display information, or view the image.
7. If “Save Rotation” is checked, rotation will be saved directly and original file will be covered.

Image	File	Format	Color	Pixels	Size	Loaded Size	Multiple Frames	Index	Sampled	Scaled	Mod
	D:\tmp\5\2 - 副本....	png	RGBAlpha	2252x2150	7.152 MB	512x488	false	0	false	true	<input checked="" type="checkbox"/> Image <input checked="" type="checkbox"/> File <input checked="" type="checkbox"/> Format <input checked="" type="checkbox"/> Color <input checked="" type="checkbox"/> Pixels <input checked="" type="checkbox"/> Size <input checked="" type="checkbox"/> Loaded Size <input checked="" type="checkbox"/> Multiple Frames <input checked="" type="checkbox"/> Index <input checked="" type="checkbox"/> Sampled <input checked="" type="checkbox"/> Scaled <input checked="" type="checkbox"/> Modified Time <input checked="" type="checkbox"/> Create Time
	D:\tmp\5\yy15 - 副... tif	tif	RGB	1920x1001	4.972 MB	512x266	true	0	false	true	
	D:\tmp\5\4 - 副本....	png	RGBAlpha	1060x874	1.797 MB	512x422	false	0	false	true	
	D:\tmp\5\o23L9 - ...	gif	RGB	400x400	1.393 MB	512x512	true	0	false	true	
	D:\tmp\5\7 - 副本....	png	RGBAlpha	533x473	620.909 KB	512x454	false	0	false	true	
	D:\tmp\5\o_Chicken - 副本.gif	gif	RGB	98x98	523.624 KB	512x512	true	0	false	true	2018-11-28

## 5.6 Files List Mode

Click button “Files List” or select the item from “Columns” to enter this mode:

1. All image files are displayed in table. Only basic attributes of image are listed and no image is displayed.
2. Click headers to sort the list.
3. Click “+” in the right-top corner of the table to select columns to be displayed.
4. Double click a row to view the image in popped window.
5. Select multiple rows to delete or rotate.
6. Select one row to rename the file, display information, or view the image.
7. If “Save Rotation” is checked, rotation will be saved directly and original file will be covered.

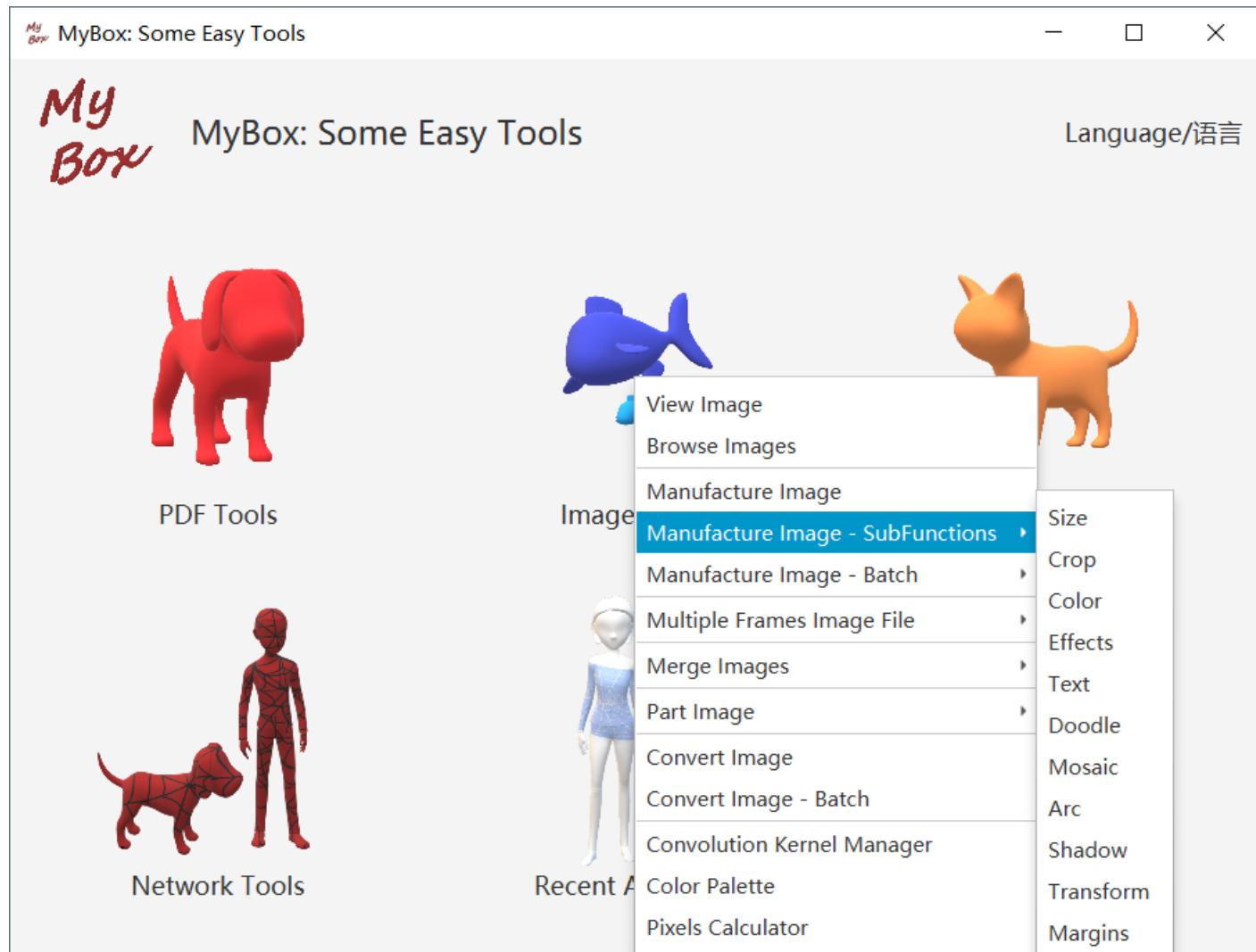
File	Format	Color	Pixels	Size	Multiple Frames	Index	Modified Time	Create Time
D:\tmp\1\mm1.jpg	jpeg	YCbCr	4096x2304	3.049 MB	false	0	2017-08-19 09:54:27	2017-08-19 09:54:27
D:\tmp\1\mm2.jpg	jpeg	YCbCr	4096x2304	3.772 MB	false	0	2017-08-19 09:54:27	2017-08-19 09:54:27
D:\tmp\1\mm3.jpg	jpeg	YCbCr	4096x2304	4.104 MB	false	0	2017-08-19 09:54:27	2017-08-19 09:54:27
D:\tmp\1\mm4.jpg	jpeg	YCbCr	4096x2304	4.137 MB	false	0	2017-08-19 09:54:27	2017-08-19 09:54:27
D:\tmp\1\mm5.jpg	jpeg	YCbCr	2304x4096	3.855 MB	false	0	2017-08-19 10:23:47	2017-08-19 10:23:47
D:\tmp\1\mm6.jpg	jpeg	YCbCr	4096x2304	2.842 MB	false	0	2017-08-19 09:47:27	2017-08-19 09:47:27
D:\tmp\1\1.jpg	jpeg	YCbCr	492x497	54.306 KB	false	0	2019-04-15 13:42:27	2019-04-15 13:42:27
D:\tmp\1\hh.jpg	jpeg	YCbCr	834x858	501.921 KB	false	0	2019-04-17 15:14:27	2019-04-17 15:14:27
D:\tmp\1\1\2.jpg	jpeg	YCbCr	271x248	61.756 KB	false	0	2019-04-18 10:33:27	2019-04-18 10:33:27
D:\tmp\1\1\3.jpg	jpeg	YCbCr	252x318	65.596 KB	false	0	2019-04-18 10:33:27	2019-04-18 10:33:27
D:\tmp\1\1\3-m.jpg	jpeg	GRAY	504x636	125.433 KB	false	0	2019-04-18 11:22:14	2019-04-18 11:22:14
D:\tmp\1\1\3-m-m.jpg	jpeg	GRAY	504x636	128.273 KB	false	0	2019-04-18 11:25:36	2019-04-18 11:25:36
D:\tmp\1\1\3-m-m-...	jpeg	YCbCr	504x636	214.73 KB	false	0	2019-04-18 11:25:42	2019-04-18 11:25:42
D:\tmp\1\1\3-m-m-...	jpeg	GRAY	504x636	144.097 KB	false	0	2019-04-18 11:25:48	2019-04-18 11:25:48
D:\tmp\1\1\3-m-m-...	jpeg	GRAY	504x636	122.729 KB	false	0	2019-04-18 11:25:52	2019-04-18 11:25:52
D:\tmp\1\1\3-m-m-...	jpeg	GRAY	504x636	125.433 KB	false	0	2019-04-18 11:25:56	2019-04-18 11:25:56
D:\tmp\1\1\4.png	png	RGBAlpha	1060x874	1.797 MB	false	0	2019-04-13 20:35:09	2019-04-13 20:35:09
D:\tmp\1\1\5.jpg	jpg	YCbCr	1060x874	1.767 MB	false	0	2019-04-13 20:35:17	2019-04-13 20:35:17

View Information Rename Delete  Confirm When Delete Sort Name Descending Previous Next

D:\tmp\1\1\3-m.jpg Format:jpeg Modify Time:2019-04-18 11:22:14 Size:125.433 KB Pixels:504x636 Loaded Size:512x646 Displayed Size:5...

## 6 Image Manufacture

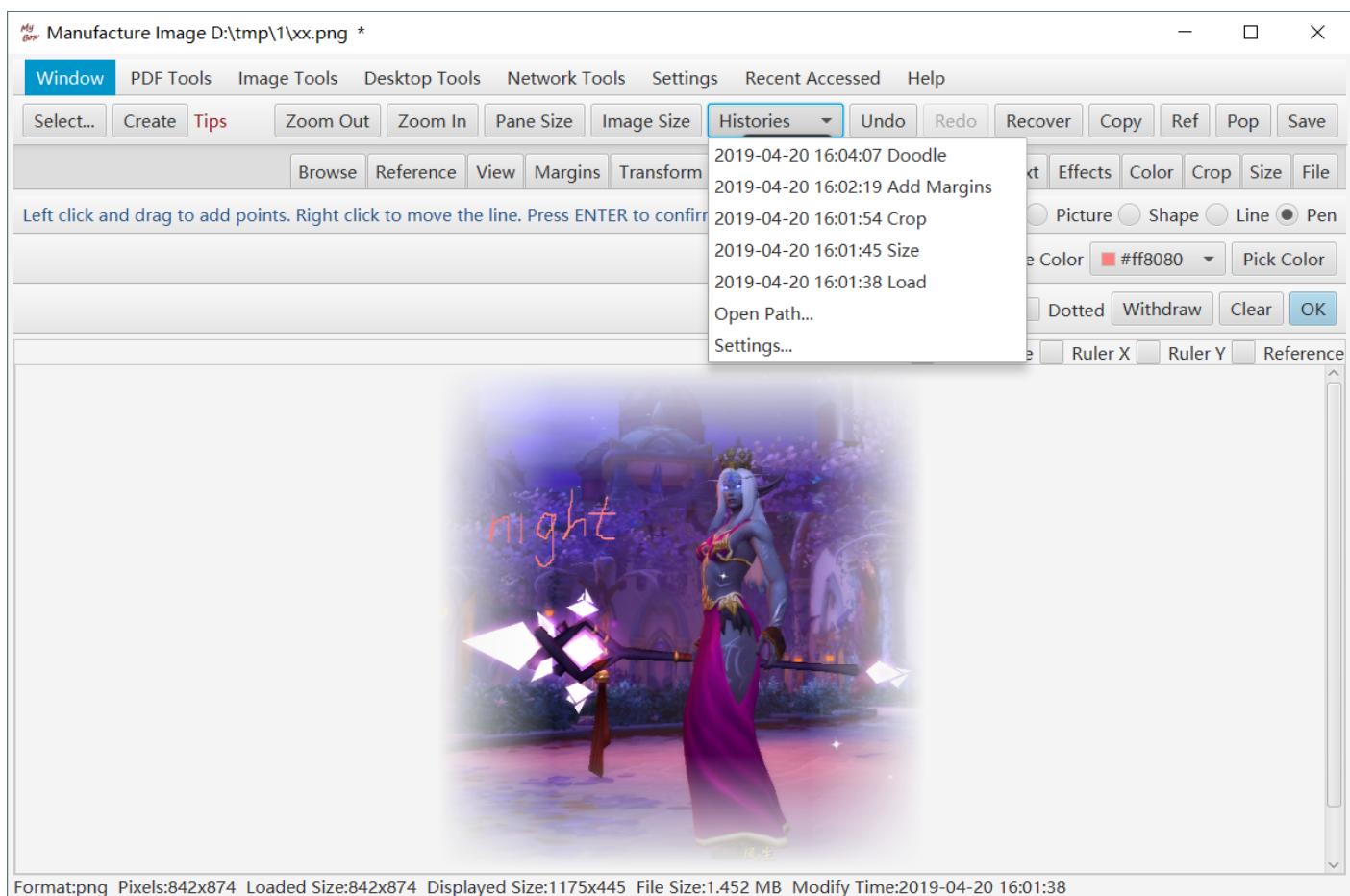
Tool “Image Manufacture” includes following functions: Size, Crop, Color, Effect, Text, Doodle, Mosaic, Arc, Shadow, Transform, and Margins.



## 6.1 Summary

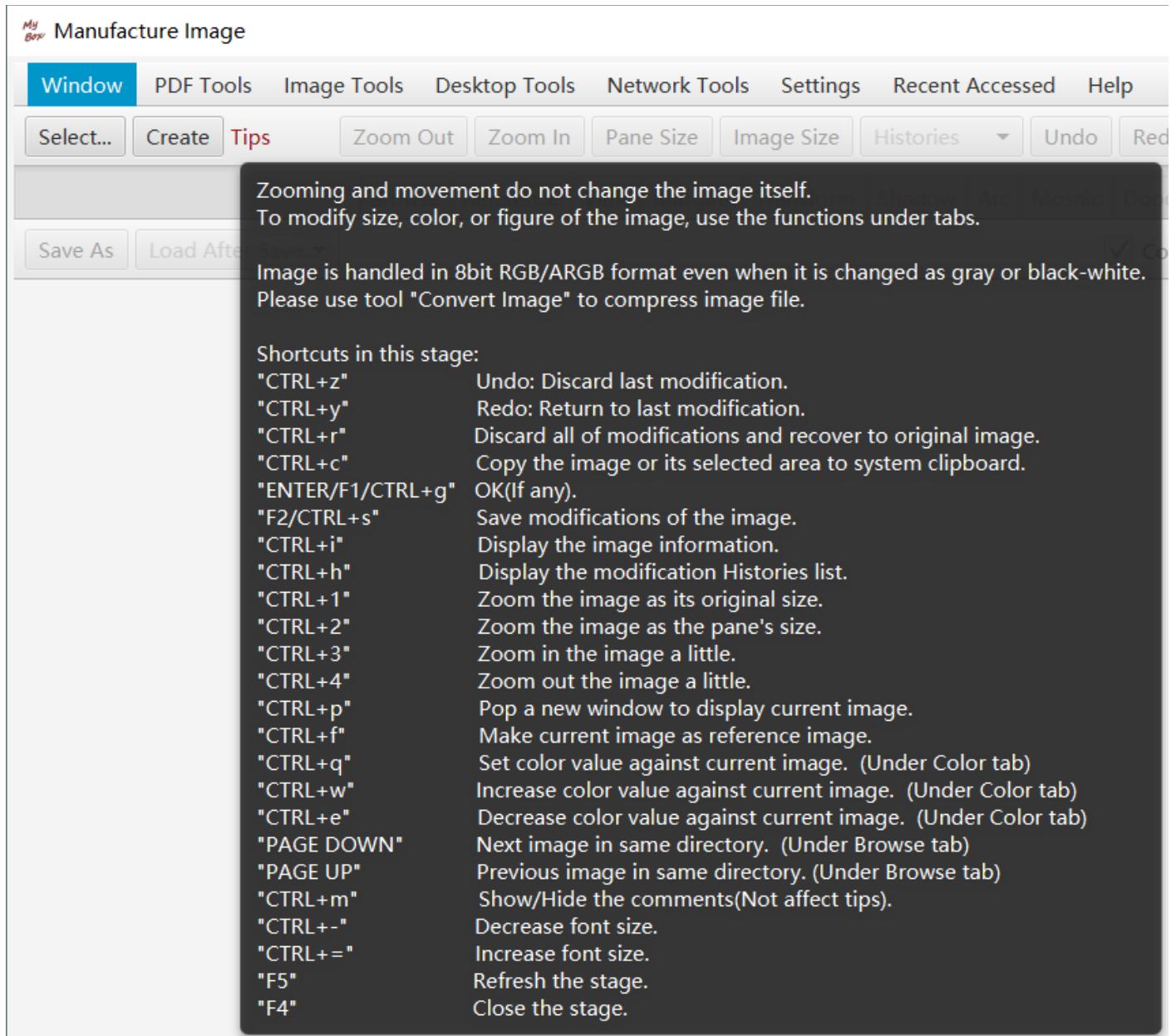
This tool is used to create or modify image file:

1. There are some tabs in top of interface which provide functions to manufacture image. Followed sections will mention each of them.
2. Buttons of “Zoom In”, “Zoom Out”, movement, “Pane Size”, “Loaded Size” are to change size or location of image in screen instead of modifying the image itself. To modify size, color, or figure of the image, use functions under these tabs.
3. Click button "Save"(CTRL+s) to write all modifications in the image file.
4. Click button "Recover"(CTRL+r) to discard all of modifications and set back as the original image.
5. Click buttons "Undo"(CTRL+z)/"Redo"(CTRL+y) to discard/return the last modification.
6. Click button "Copy"(CTRL+c) to copy whole image or its selected area to system clipboard.
7. When press CTRL+v, tool will switch to tab “Doodle”, make “Picture” selected, and paste image of system clipboard into current image automatically.
8. Basic attributes of current image will be shown in bottom label.
9. Modification histories will be recorded automatically. User can select history item to set image back to the status of some previous modification.
10. User can select whether show coordinate, rulers, reference image, or statistic data.
11. When handled in memory, image is always in 8 bits ARGB format, even when it is changed as gray or black-white.



## 6.2 Tips

Move mouse upon the red label “Tips” and information will be popped:



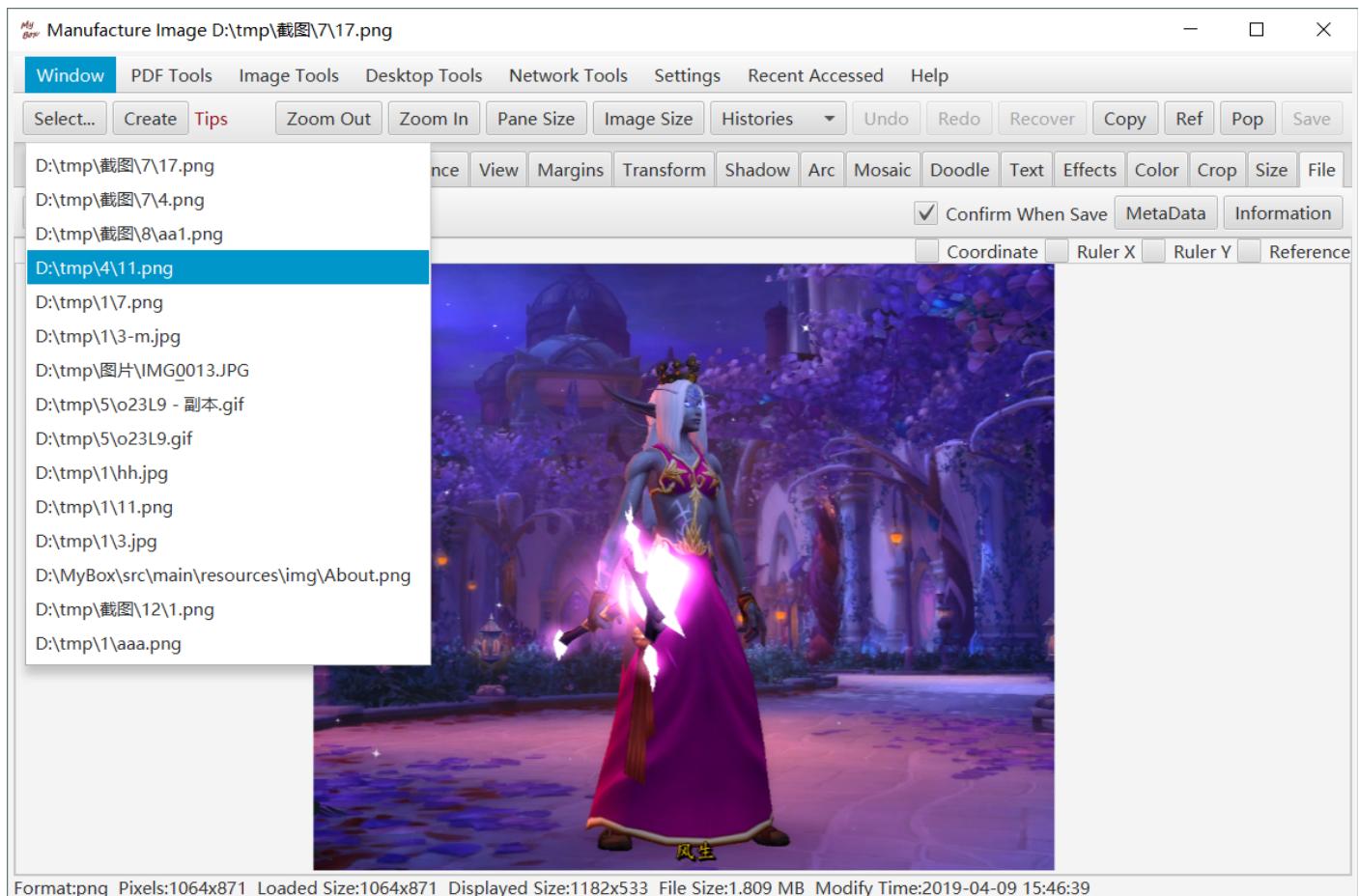
## 6.3 Shortcuts

Shortcuts in this interface include:

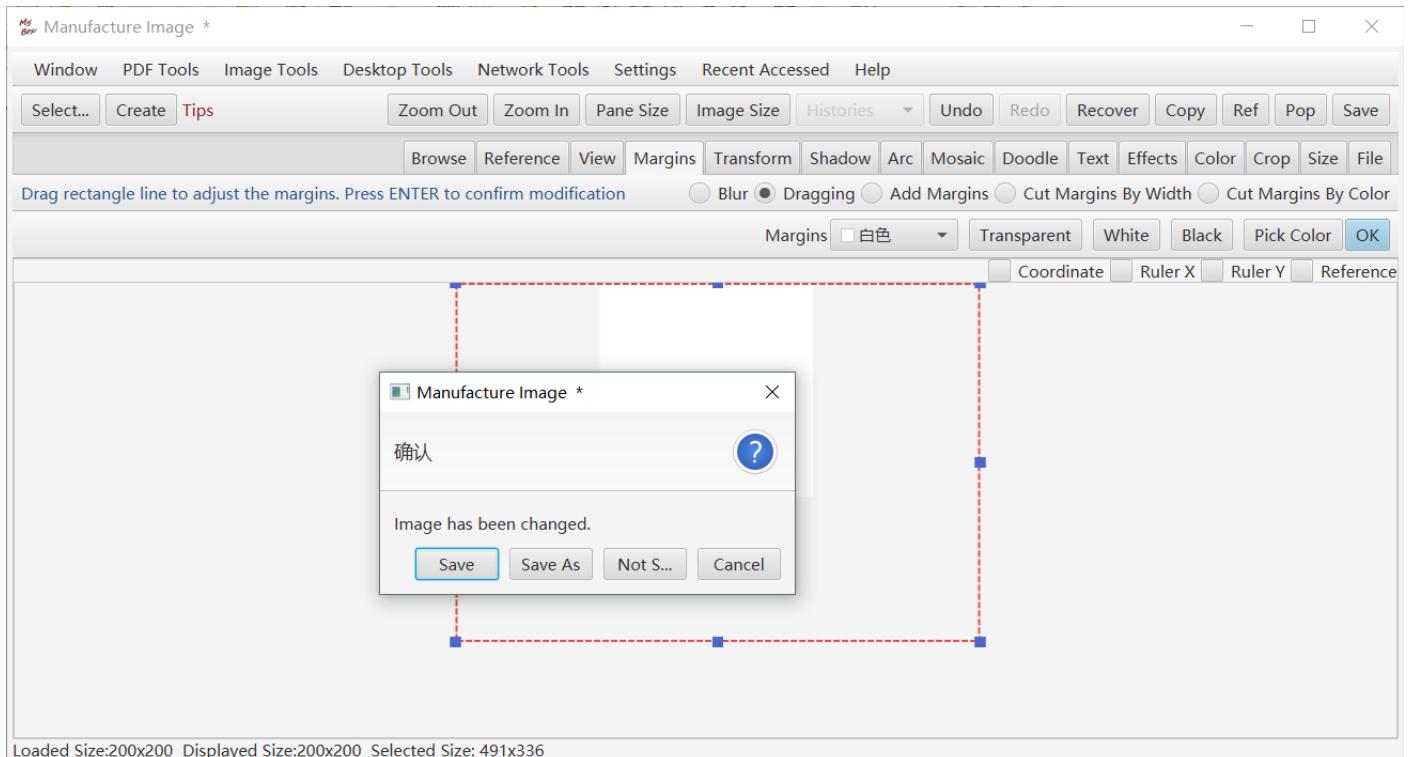
"CTRL+z"	Undo: Discard last modification.
"CTRL+y"	Redo: Return to last modification.
"CTRL+r"	Discard all of modifications and recover to original image.
"CTRL+c"	Copy the image or its selected area to system clipboard.
"ENTER/F1/CTRL+g"	OK(If any).
"F2/CTRL+s"	Save modifications of the image.
"CTRL+i"	Display the image information.
"CTRL+h"	Display the modification Histories list.
"CTRL+1"	Zoom the image as its original size.
"CTRL+2"	Zoom the image as the pane's size.
"CTRL+3"	Zoom in the image a little.
"CTRL+4"	Zoom out the image a little.
"CTRL+p"	Pop a new window to display current image.
"CTRL+f"	Make current image as reference image.
"CTRL+q"	Set color value against current image. (Under Color tab)
"CTRL+w"	Increase color value against current image. (Under Color tab)
"CTRL+e"	Decrease color value against current image. (Under Color tab)
"PAGE DOWN"	Next image in same directory. (Under Browse tab)
"PAGE UP"	Previous image in same directory. (Under Browse tab)
"CTRL+m"	Show/Hide the comments(Not affect tips).
"CTRL+-"	Decrease font size.
"CTRL+="	Increase font size.
"F5"	Refresh the stage.
"F4"	Close the stage.

## 6.4 File

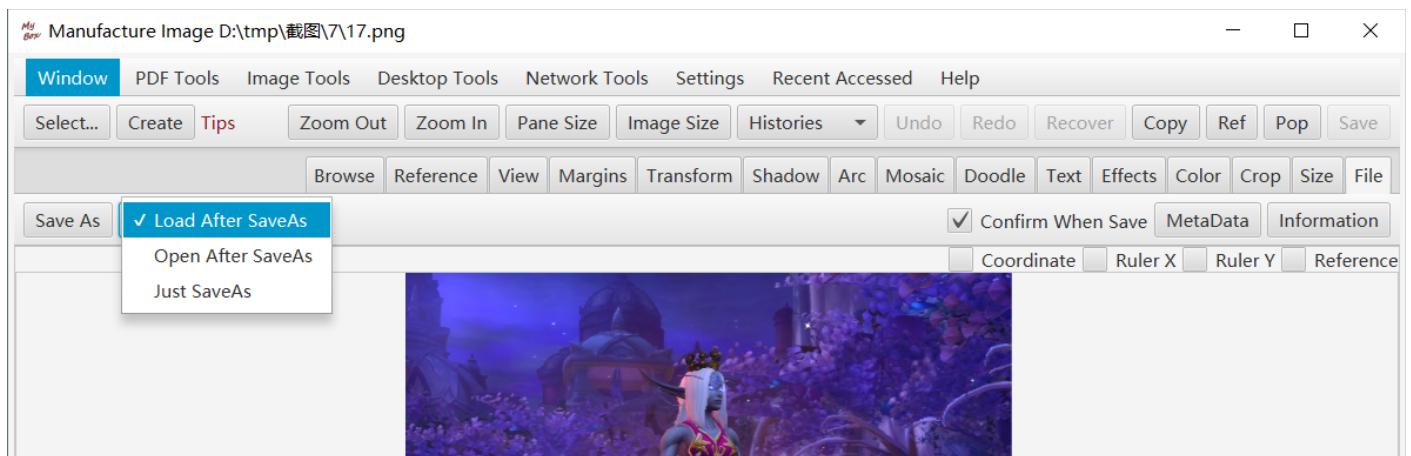
1. Move mouse upon button “Select...” in left-top corner, and the list of recently visited image files will be popped. User can close this feature in menu “Settings”.
2. Click button “Select...” to open a image file. When open file, if current image is changed, a confirmation will be popped to ask whether save the modification.
3. When “Confirm When Save” is checked, confirmation will be popped when save the image.



- Click button “Create” to make a blank image with white background. Tool will switch to tab “Margins” automatically to have user to adjust the size of blank image by dragging margins. User can change image size by functions under tab “size” either.



- Click button “Save As” to write current image as other format or othre name. Options:  
  - “Load After SaveAs”: Close current image and display the saved file in current window.
  - “Open After SaveAs”: Keep current window and pop new window to display saved file.
  - “Only SaveAs”: Neither load nor pop the saved file.



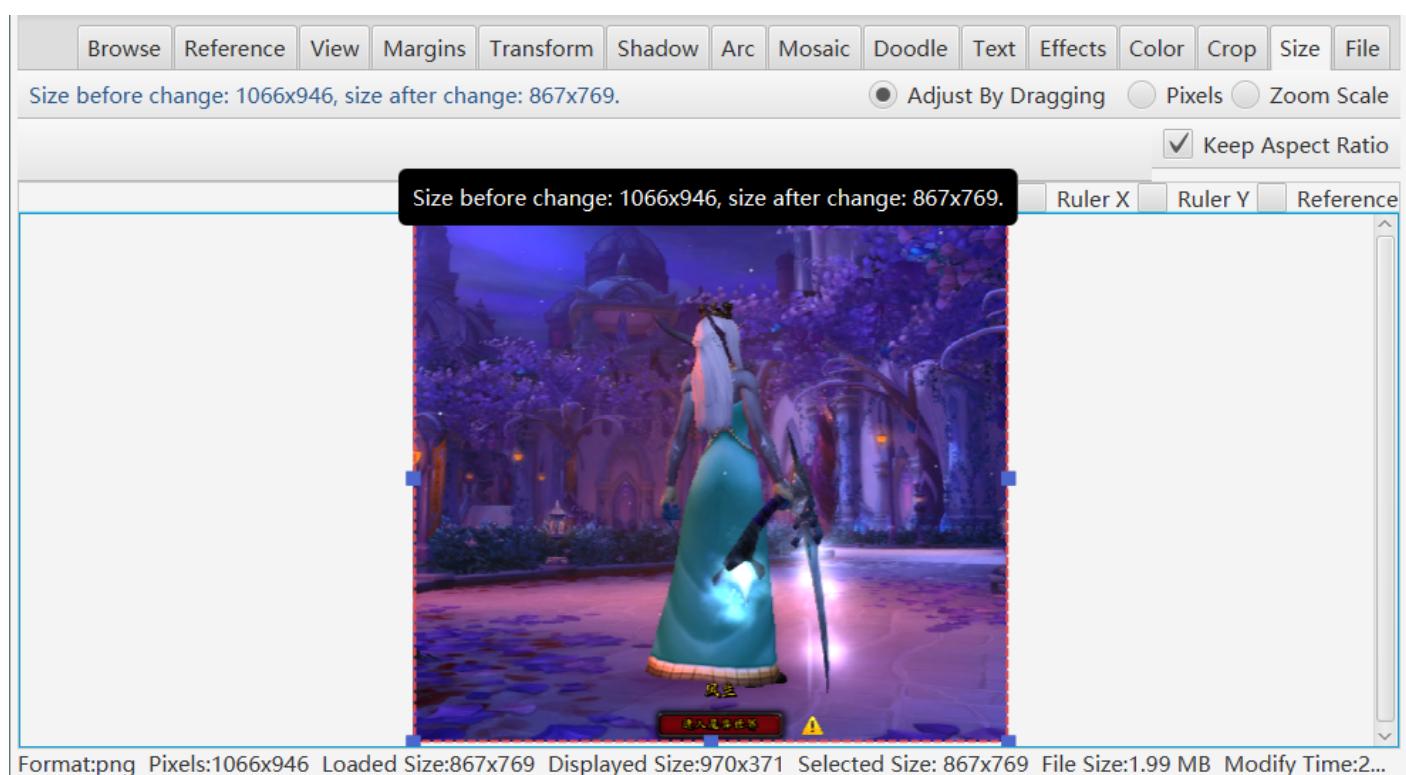
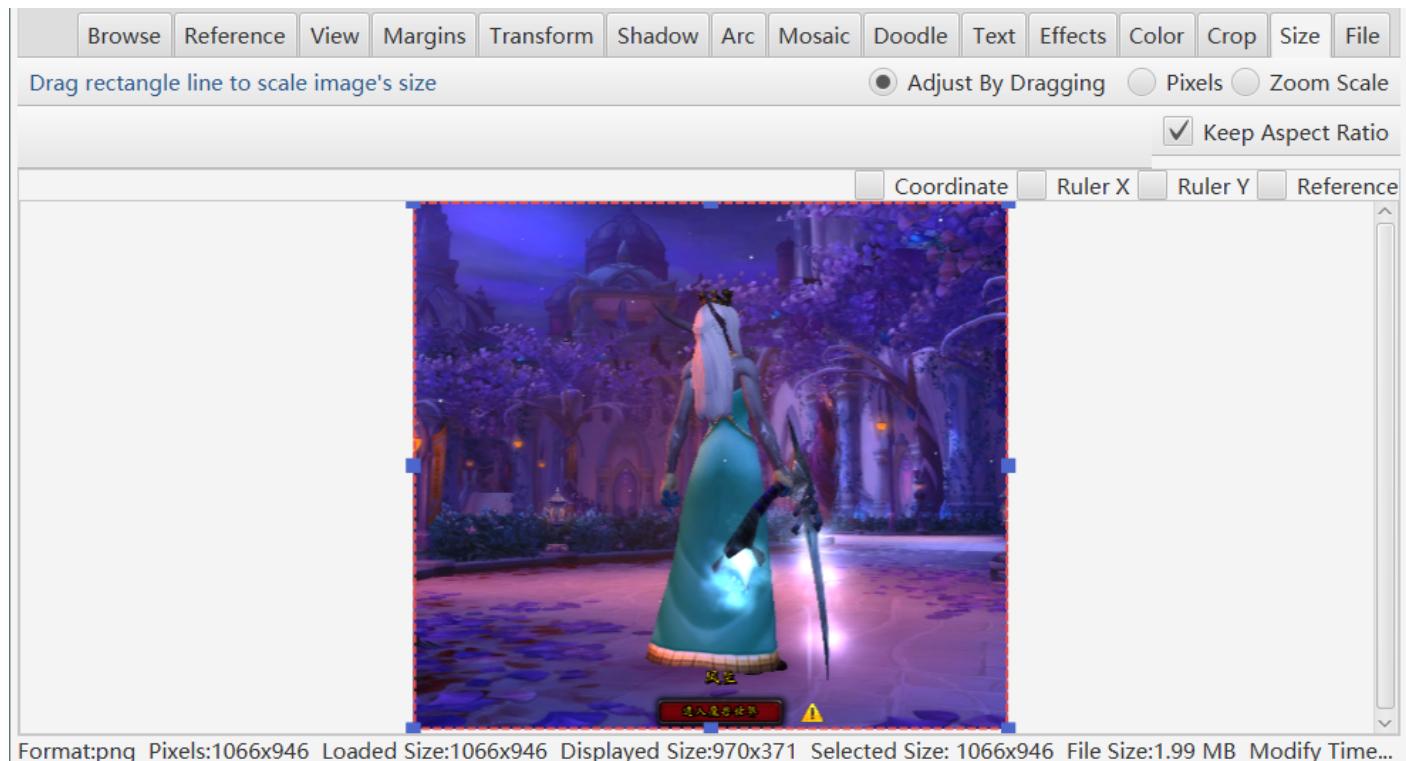
## 6.5 Size

There are 3 ways to adjust image size: dragging anchors, setting pixels, and zooming scale.

### 6.5.1 Adjust By Dragging

When “Adjust By Dragging” is selected, a dotted rectangle line with anchors is shown around the image. User can change image size by dragging the anchors.

When “Keep Aspect Ratio” is checked, image width and height is refined to keep ratio.



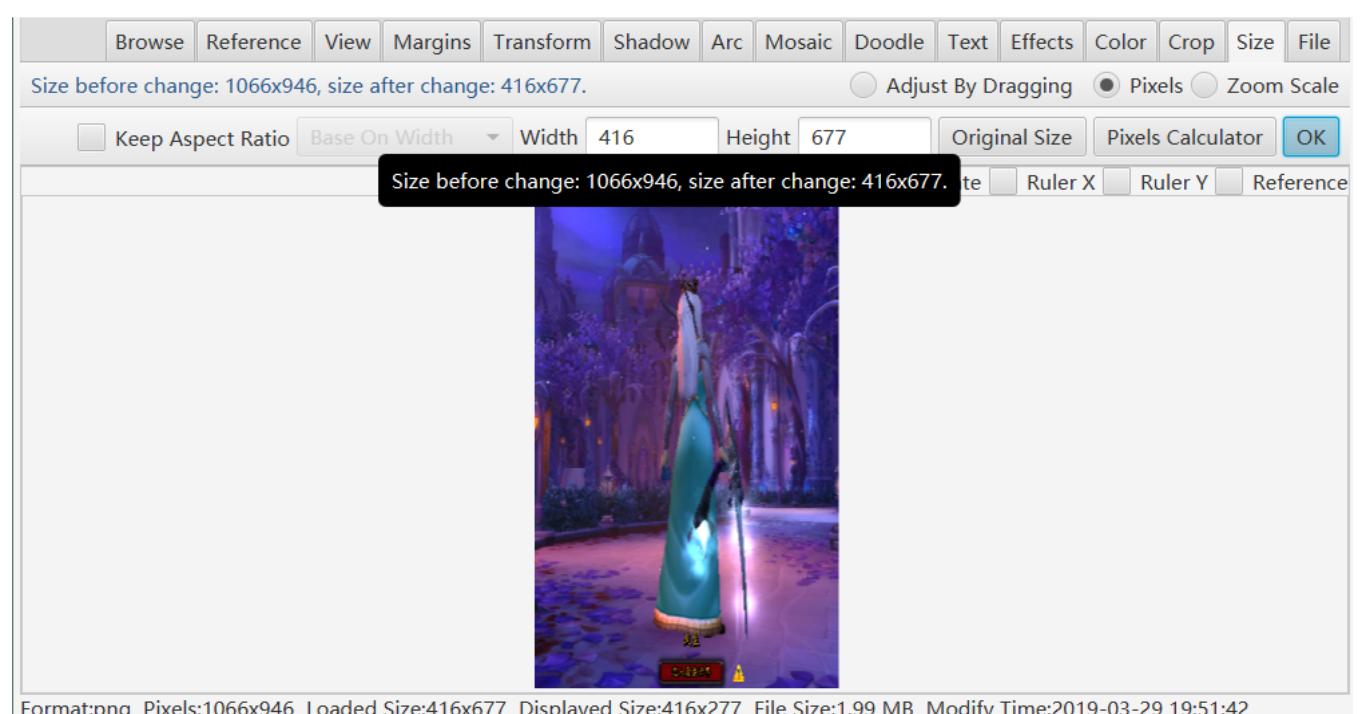
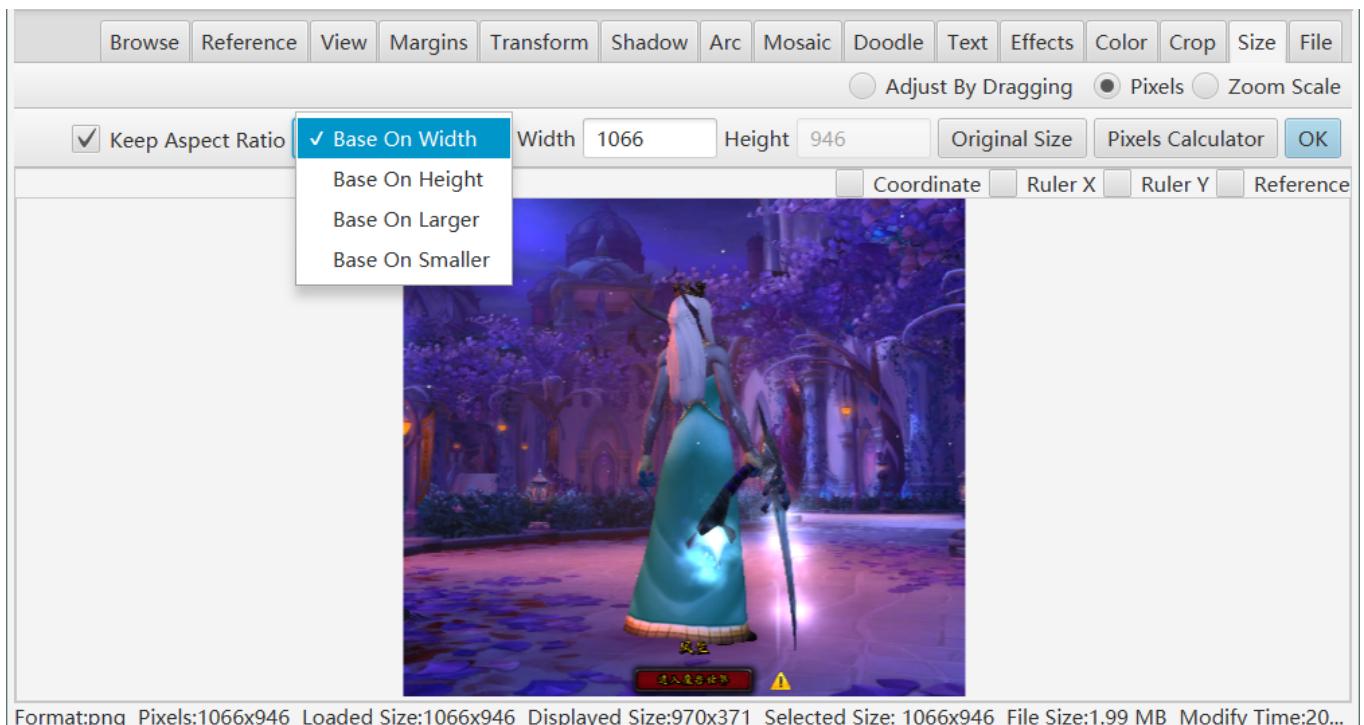
## 6.5.2 Set Pixels

When “Pixels” is selected, image size can be changed by setting pixels value.

When “Keep Aspect Ratio” is checked, pixels will be determined by one of following selection:

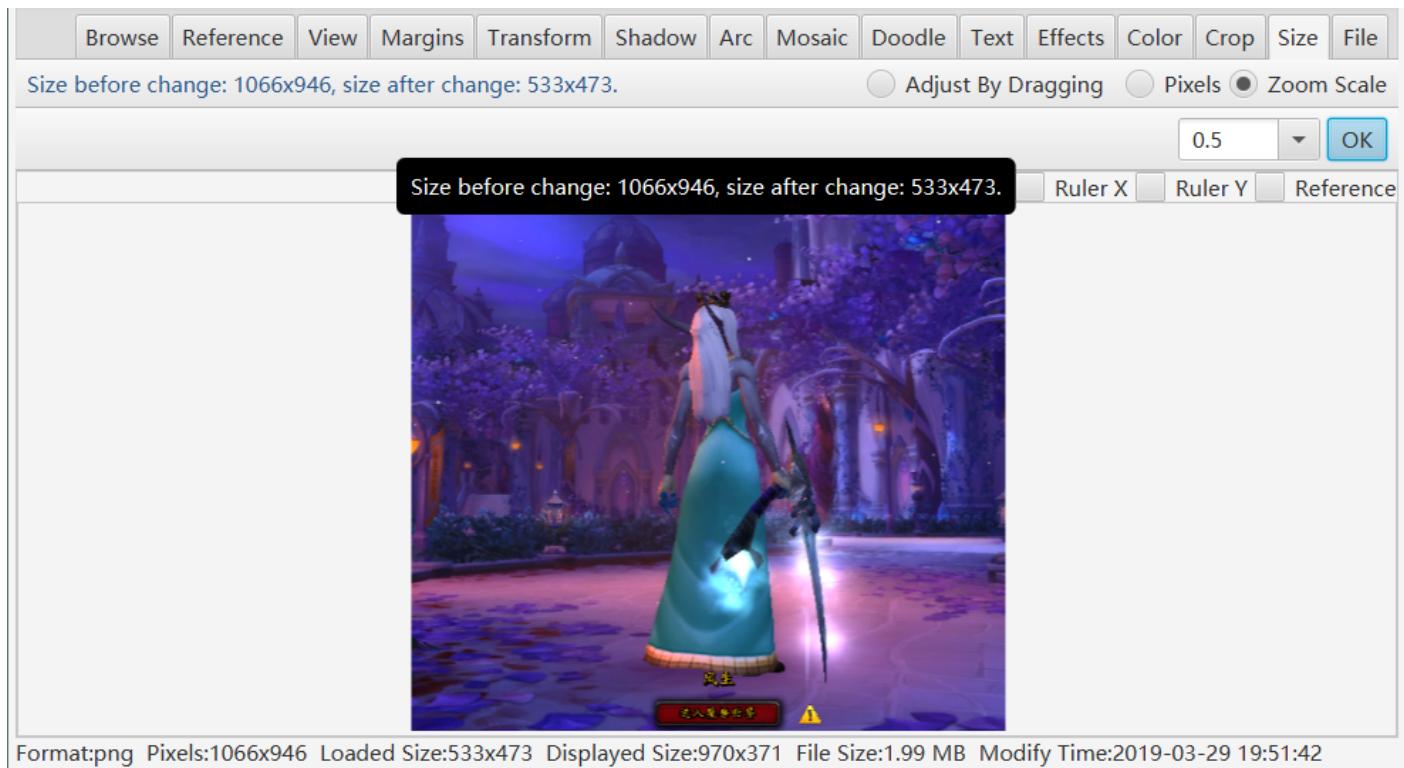
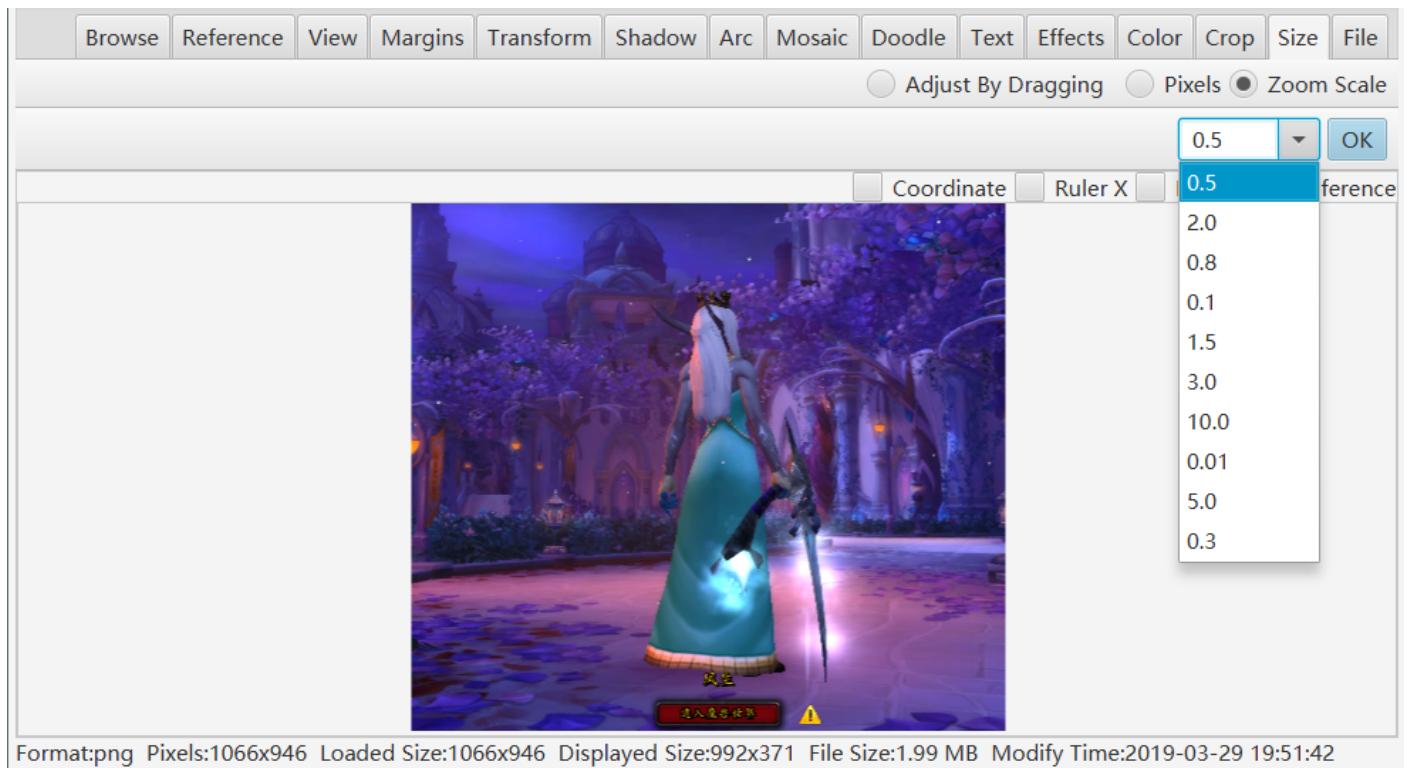
1. Base on Width. Calculate and input height automatically. User can not input height.
2. Base on Height. Calculate and input width automatically. User can not input width.
3. Base on Larger. Calculate and input the smaller of width and height automatically.
4. Base on Smaller. Calculate and input the larger of width and height automatically.

User also can click button “Pixels Calculator” to acquire common sizes of screen/print/photo/icon.



### 6.5.3 Scale

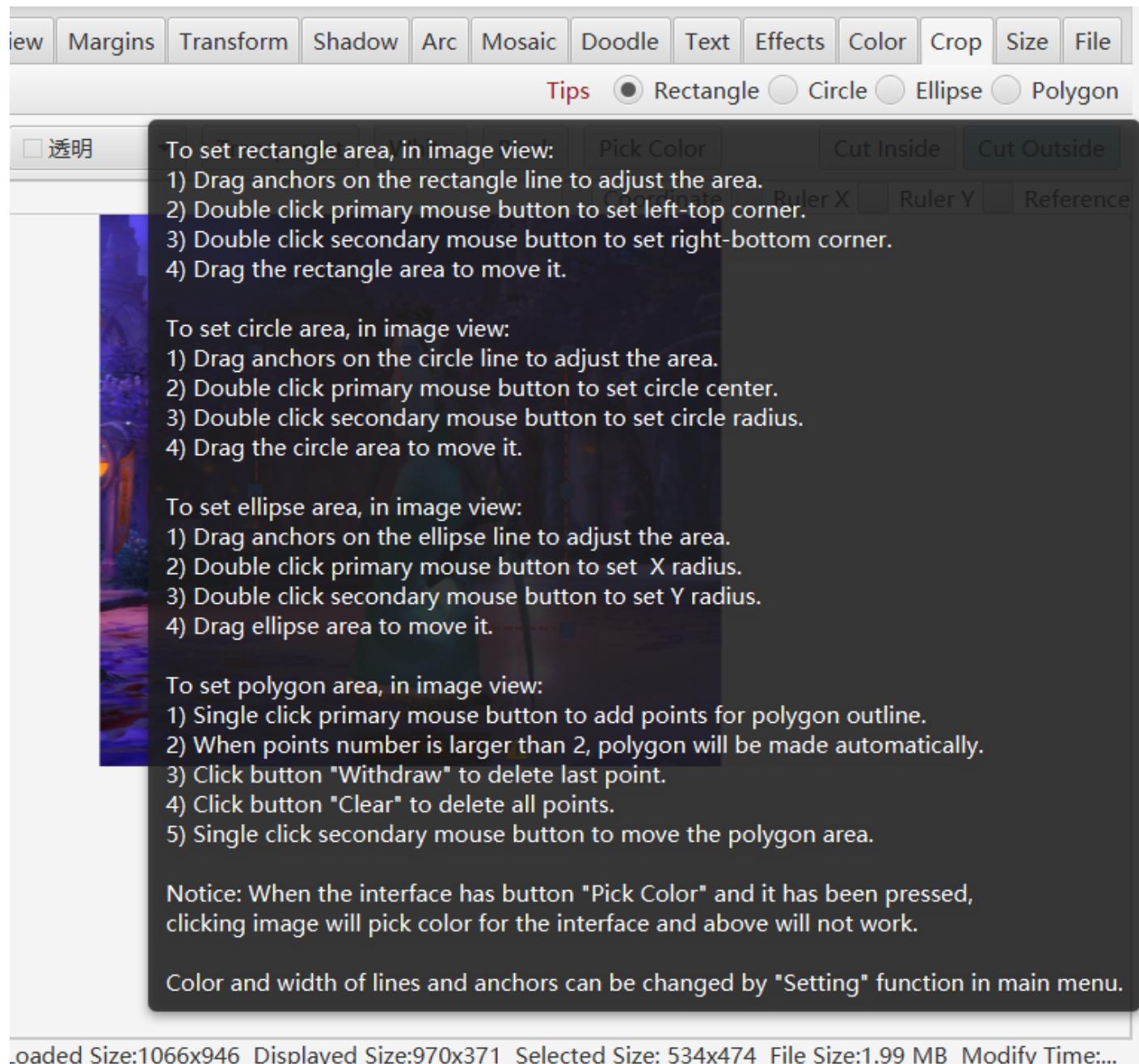
When “Scale” is selected, image size is set by zooming scale.



## 6.6 Crop

Shape rectangle/circle/ellipse/polygon can be selected to crop inside or outside.

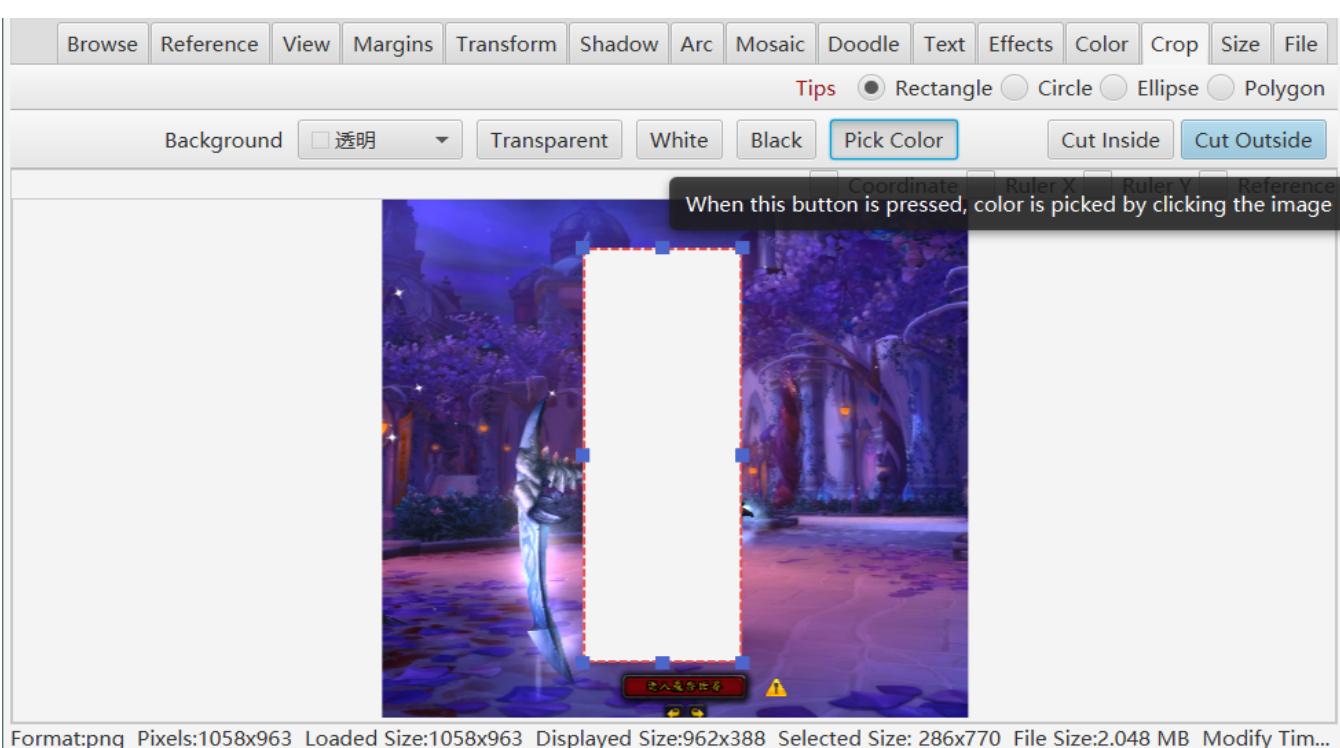
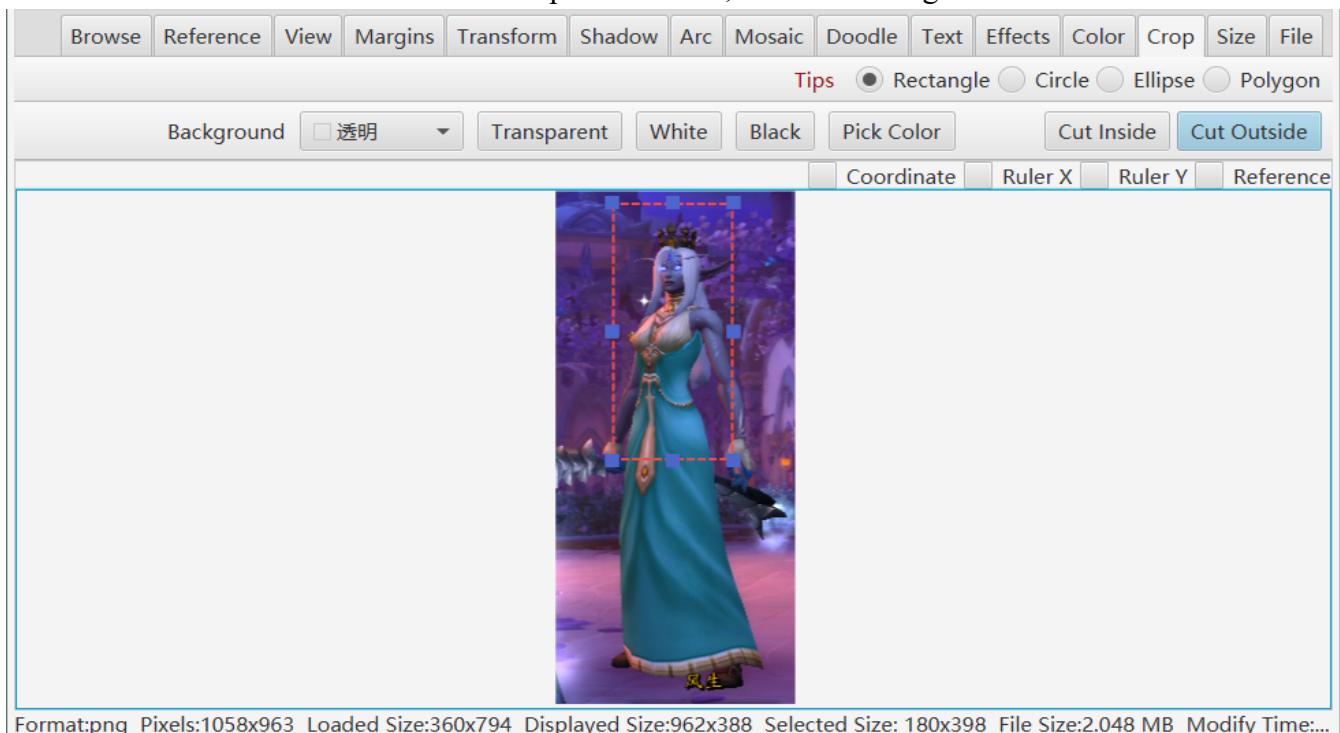
Move mouse upon the red label “Tips” beside the shape selector and information will be popped:



## 6.6.1 Crop As Rectangle

1. Adjust cropping area by dragging anchors on dotted rectangle. Or double left click to set left-top corner and double right click to set right-bottom corner.
2. Click button “Cut Outside” to keep inside area and discard outside area.
3. Click button “Cut Inside” to keep outside area and discard inside area.
4. Background color can be set. Press down button “Pick Color” and click image to get color, and press up this button to stop color picking.

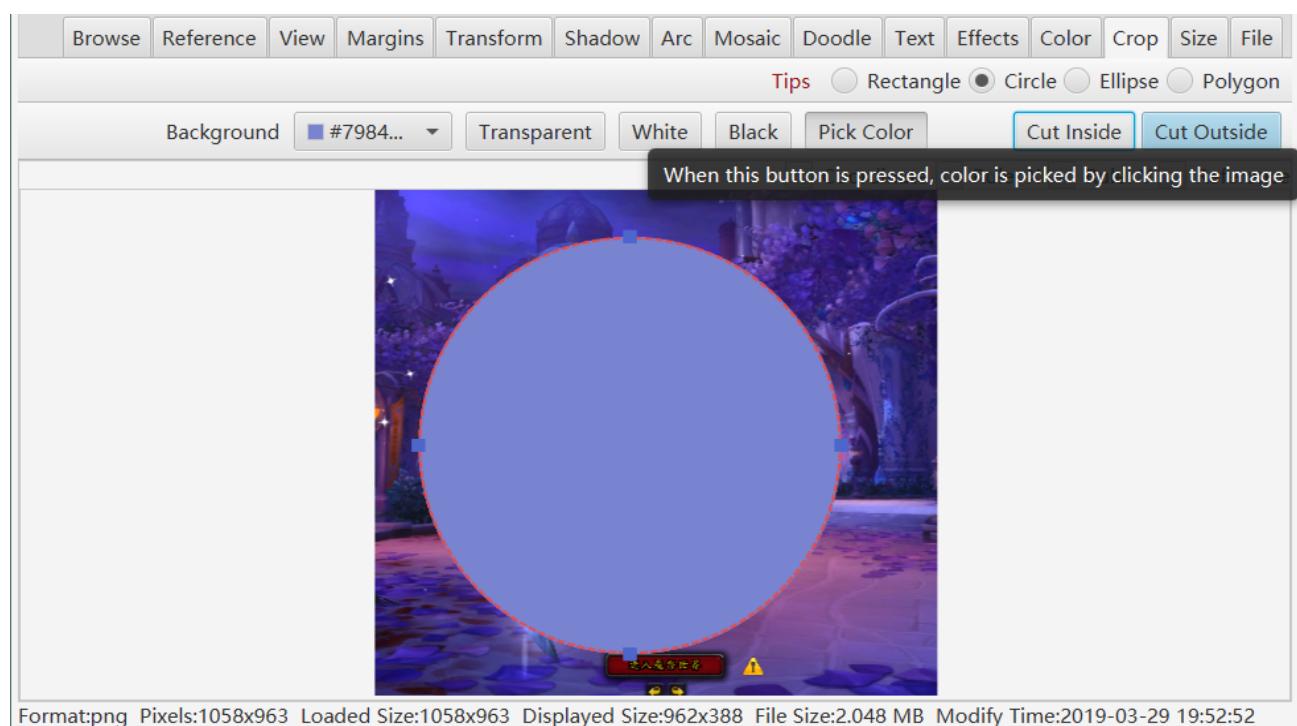
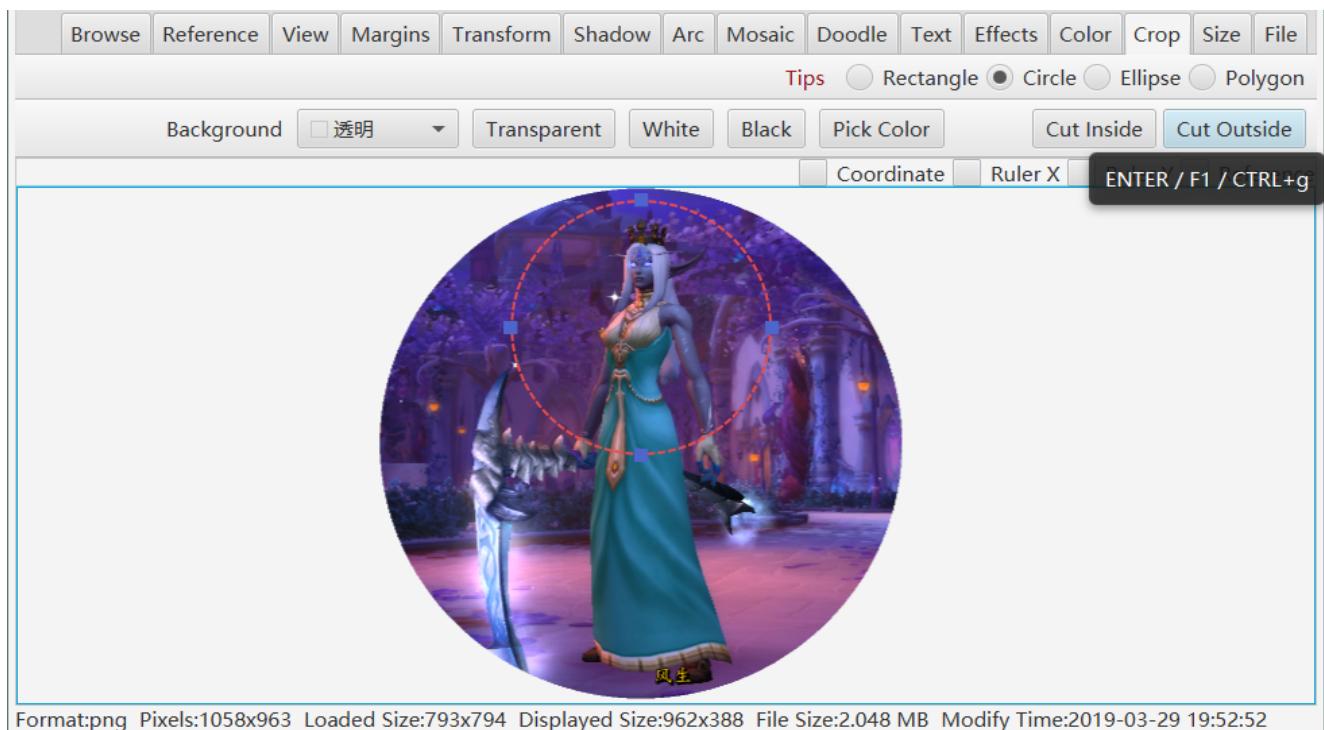
Notice: When button “Pick Color” is pressed down, double clicking does not work for area selection.



## 6.6.2 Crop As Circle

1. Adjust cropping area by dragging anchors on dotted circle. Also can double left click to set circle center and double right click to set circle radius.
2. Click button “Cut Outside” to keep inside area and discard outside area.
3. Click button “Cut Inside” to keep outside area and discard inside area.
4. Background can be set. Press down button “Pick Color” and click image to get color, and press up this button to stop color picking.

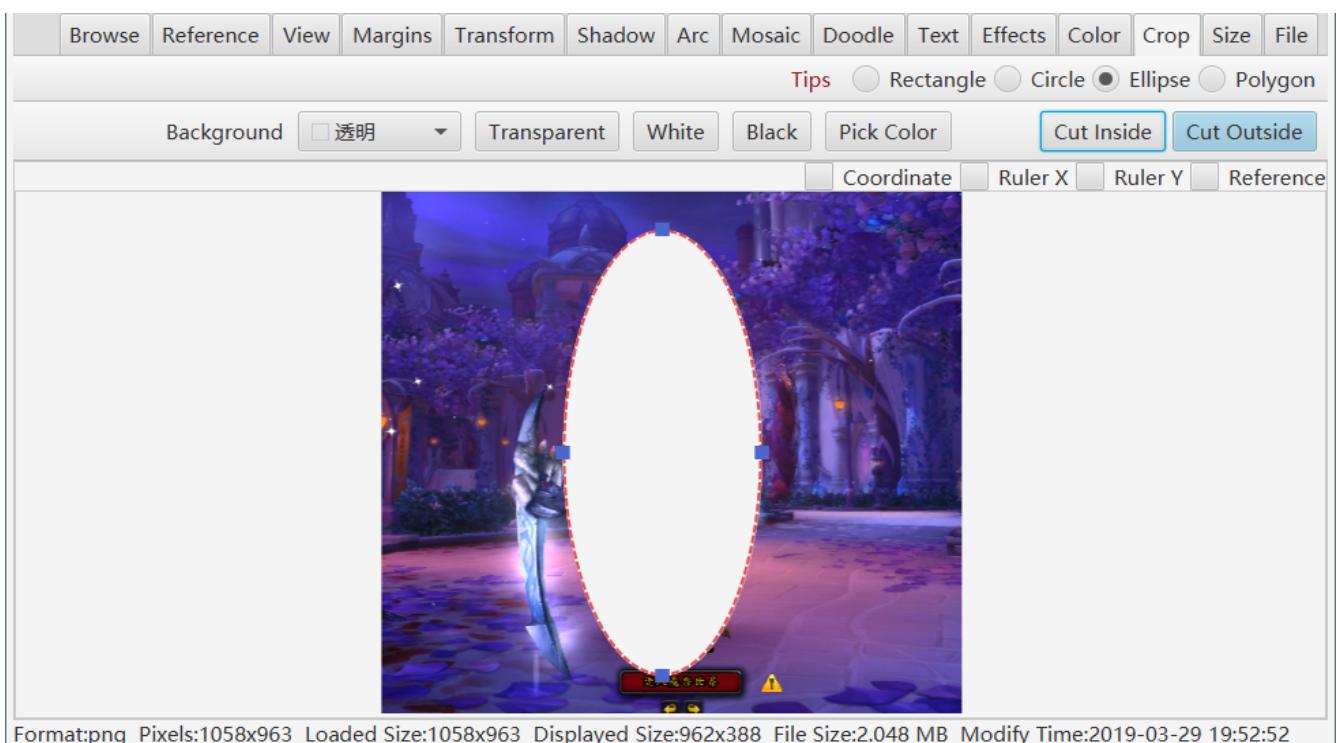
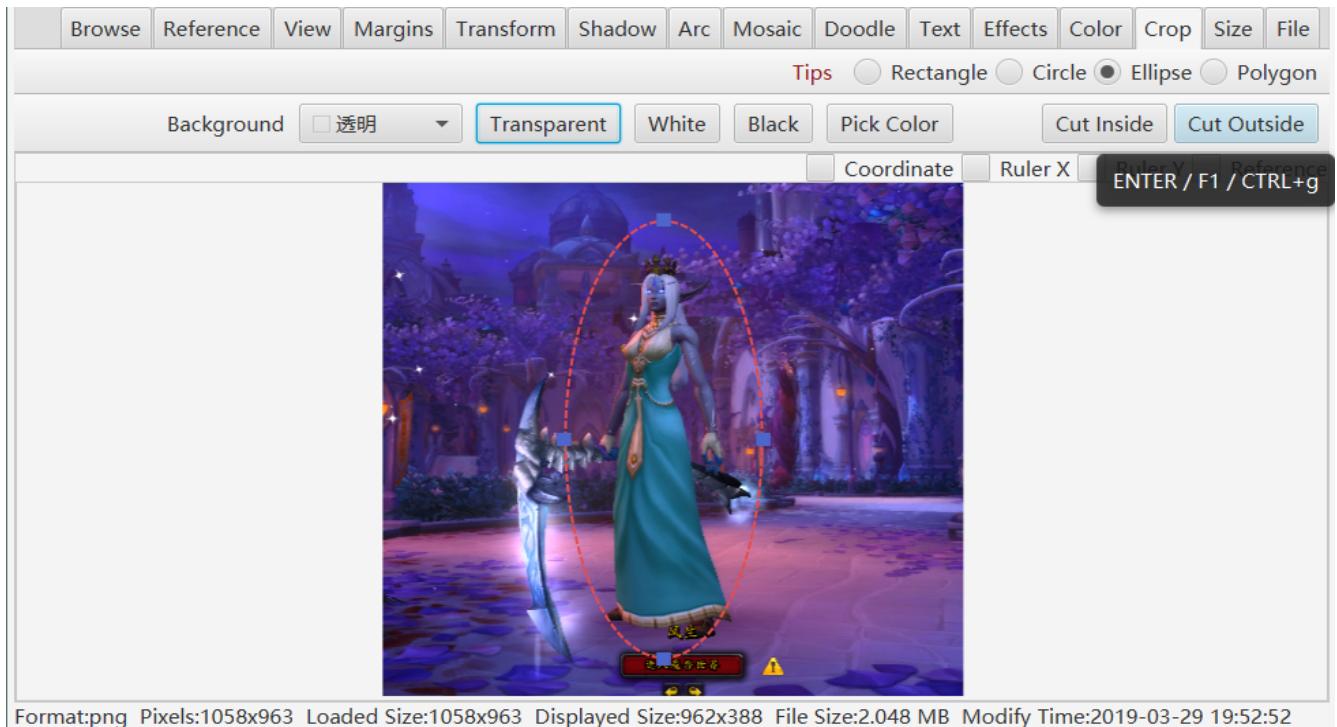
Notice: When button “Pick Color” is pressed down, double clicking does not work for area selection.



### 6.6.3 Crop As Ellipse

1. Adjust cropping area by dragging anchors on dotted ellipse. Also can double left click to set X radius and double right click to set Y radius.
2. Click button “Cut Outside” to keep inside area and discard outside area.
3. Click button “Cut Inside” to keep outside area and discard inside area.
4. Background can be set. Press down button “Pick Color” and click image to get color, and press up this button to stop color picking.

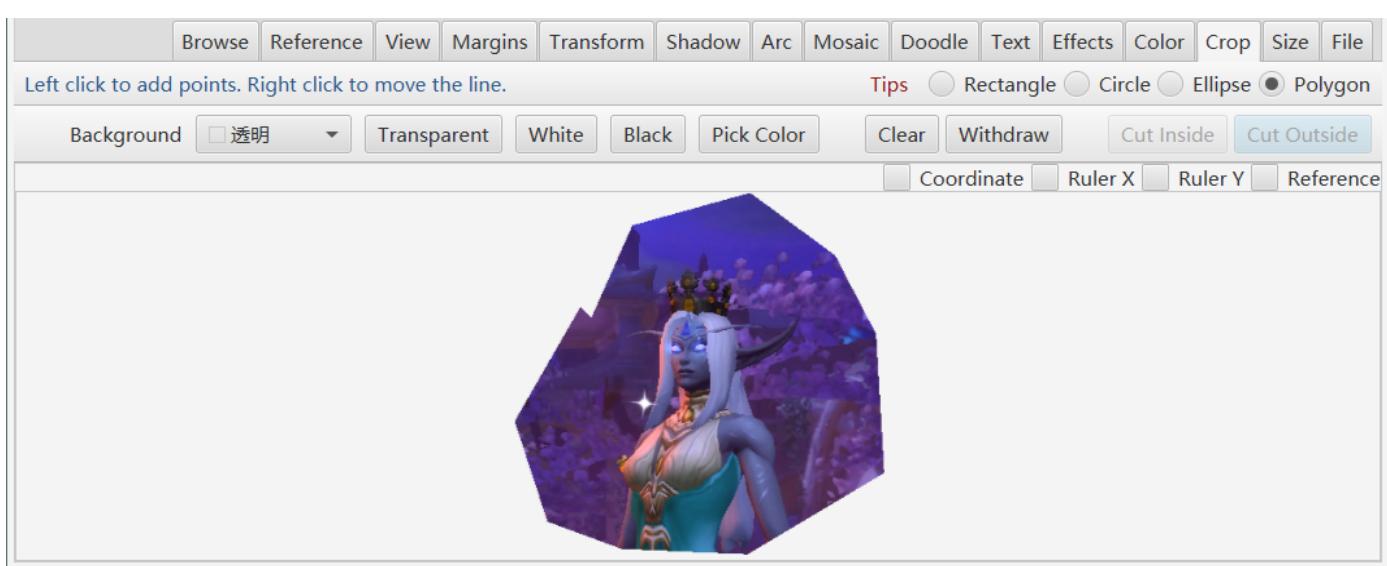
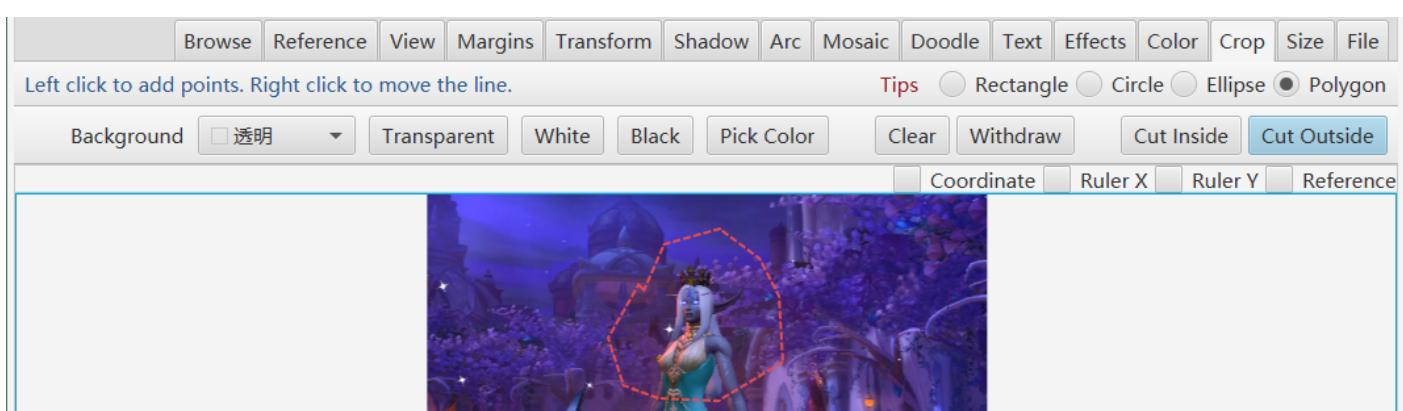
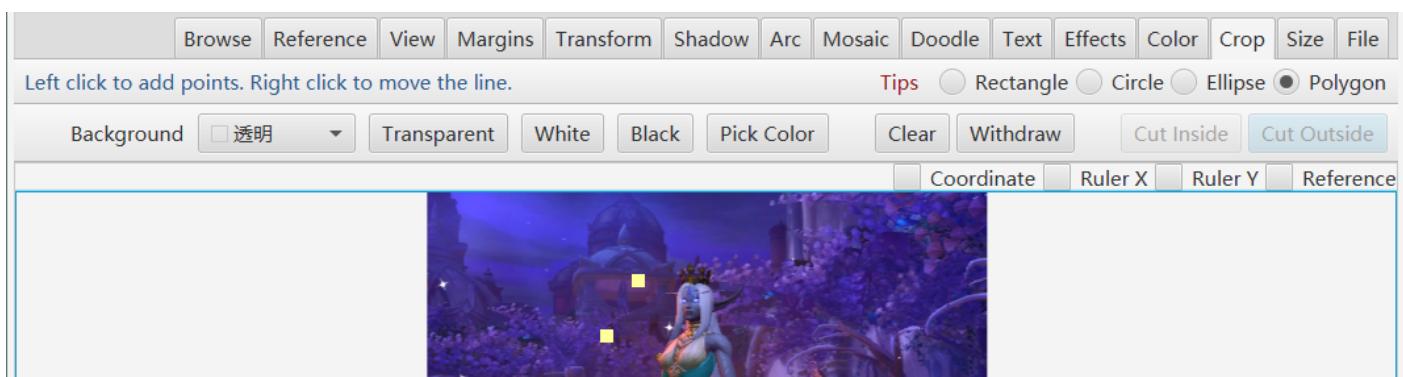
Notice: When button “Pick Color” is pressed down, double clicking does not work for area selection.



## 6.6.4 Crop As Polygon

1. Left click image to add vertexes. Dotted polygon line will be drawn on image when vertexes number is more than 2. Right click to move the polygon line.
2. Click button “Withdraw” to remove the last added vertex. Click button “Clear” to remove all vertexes.
3. Click button “Cut Outside” to keep inside area and discard outside area.
4. Click button “Cut Inside” to keep outside area and discard inside area.
5. Background color can be set. Press down button “Pick Color” and click image to get color, and press up this button to stop color picking.

Notice: When button “Pick Color” is pressed down, double clicking does not work for area selection.

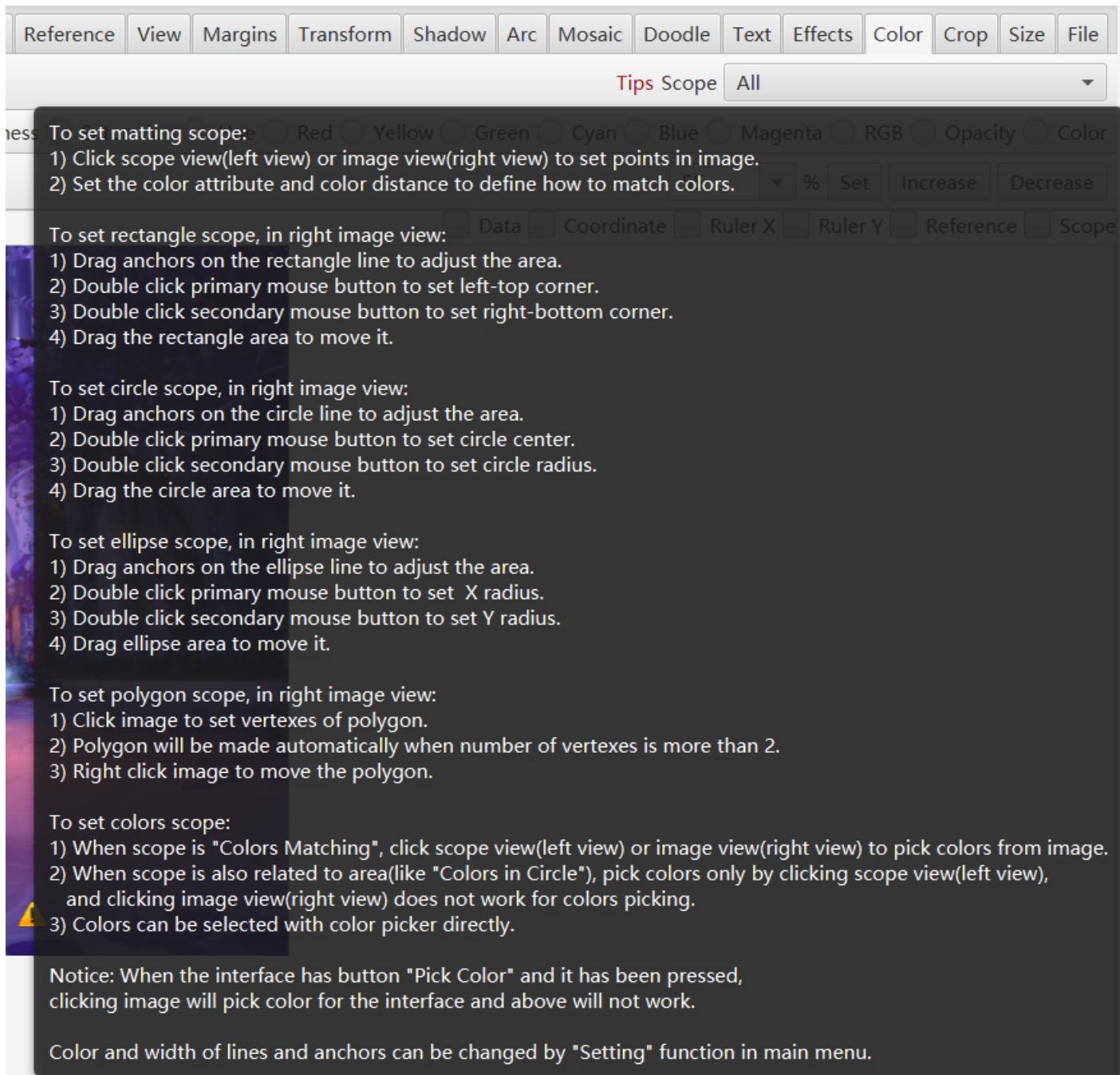


## 6.7 Color

### 6.7.1 Select Scope

Scope can be selected to handle image color. “Scope” is mentioned in a special section in the end of this chapter.

Move mouse upon the red label “Tips ”beside the scope selector and information will be popped:



### 6.7.2 Display Data

When “Data” is checked, static data will be shown, including average, variance, skewness, median, mode, minimum, maximum of occurrence of each color channel, and their histograms.

### 6.7.3 Brightness

Operations for brightness include: Set, Increase, Decrease.

Value range of brightness is 0~100.

Color	Mean	Variance	Skewness	Median	Mode	Maximum	Minimum
Grey	57	48	52	161	16	255	2
Red	62	47	50	124	23	255	0
Green	57	49	54	159	15	255	0
Blue	49	52	56	159	6	255	0
Alpha	255	0	0	0	255	255	255
Hue	77	59	0	271	30	359	0
Saturation	41	27	15	46	75	100	0
Brightness	25	20	22	54	9	100	1

Format:png Pixels:828x848 Loaded Size:828x848 Displayed Size:1050x556 File Size:957.919 KB Modify Time:2019-01-31 13:19:58

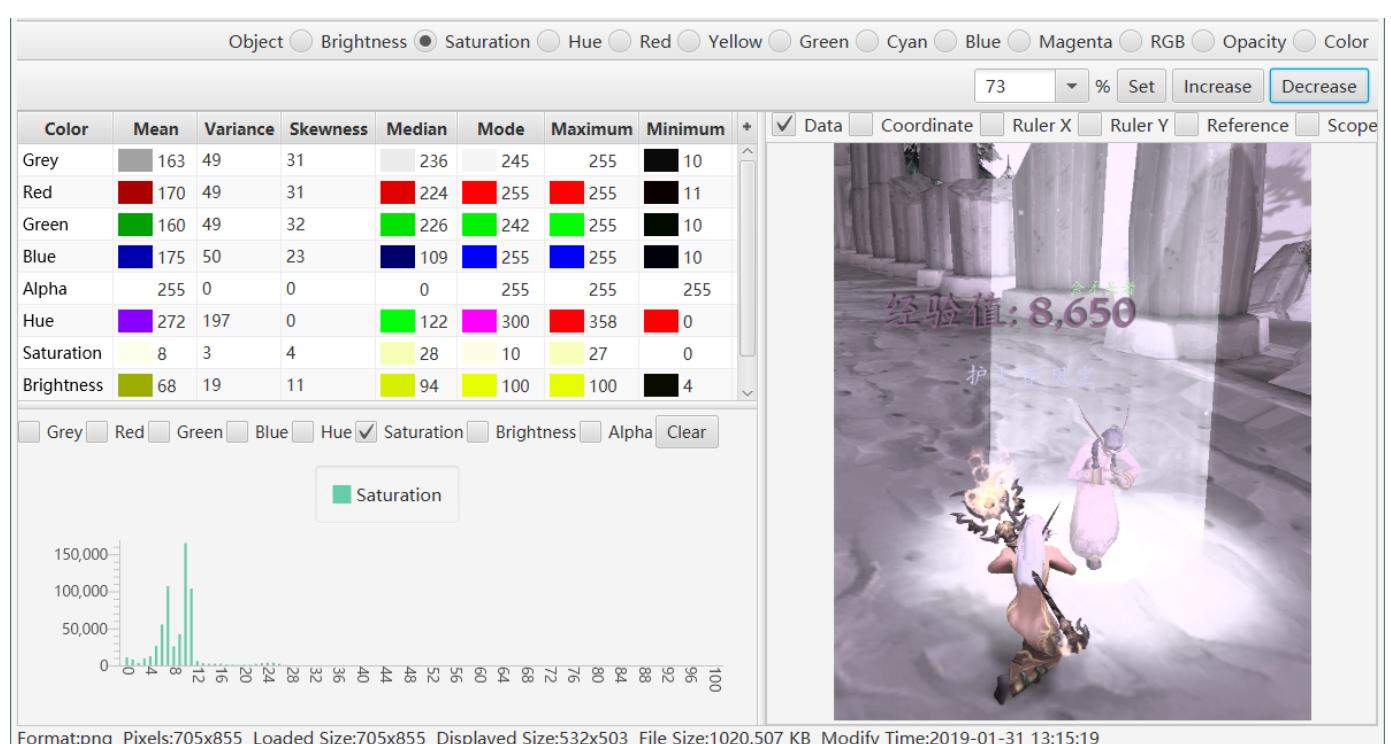
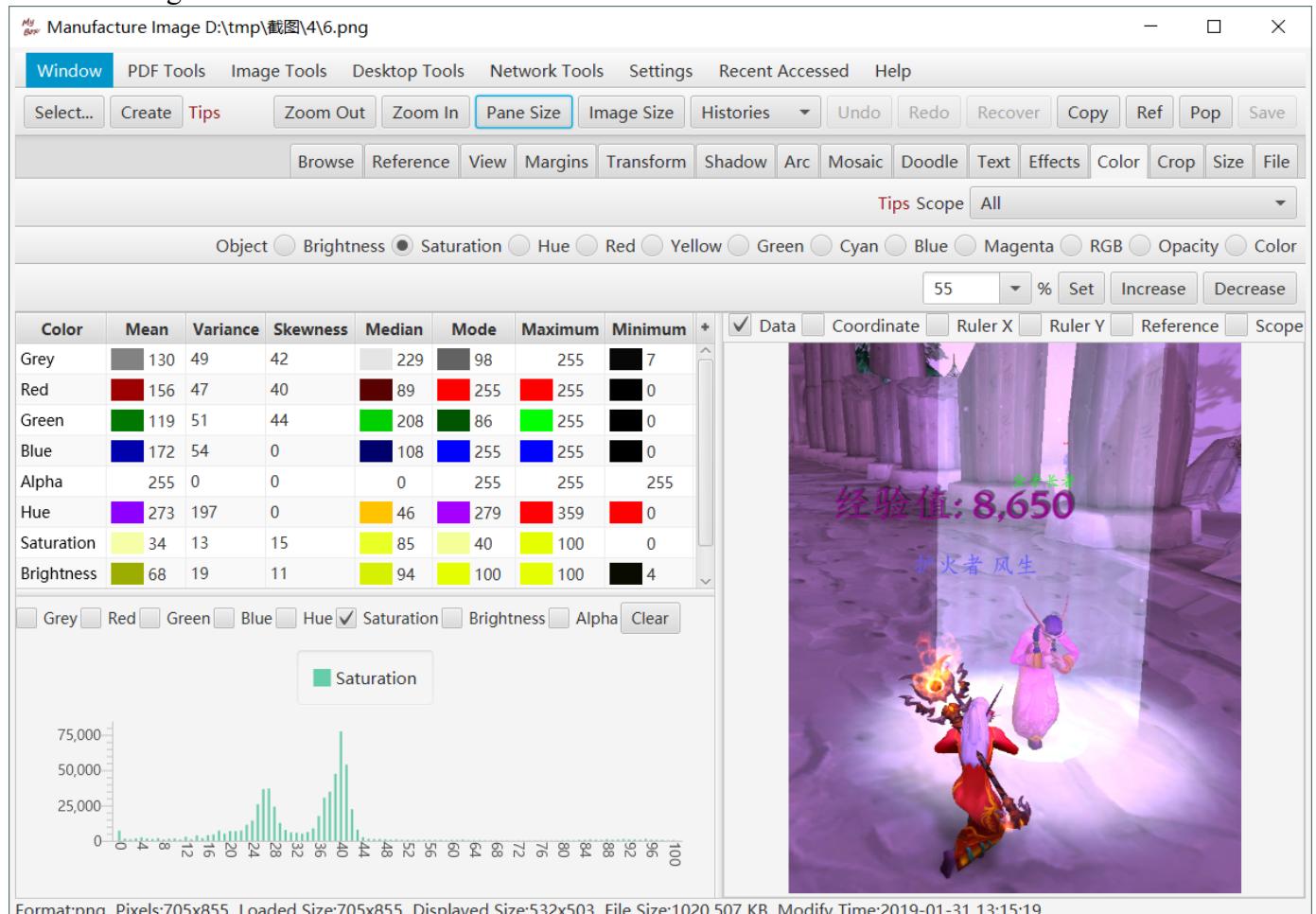
Color	Mean	Variance	Skewness	Median	Mode	Maximum	Minimum
Grey	98	74	66	69	29	255	3
Red	108	71	60	218	255	255	0
Green	97	75	68	229	27	255	0
Blue	84	82	76	93	11	255	0
Alpha	255	0	0	0	255	255	255
Hue	77	59	0	67	33	359	0
Saturation	41	27	15	57	75	100	0
Brightness	44	30	25	87	100	100	1

Format:png Pixels:828x848 Loaded Size:828x848 Displayed Size:536x503 File Size:957.919 KB Modify Time:2019-01-31 13:19:58

## 6.7.4 Saturation

Operations for saturation include: Set, Increase, Decrease.

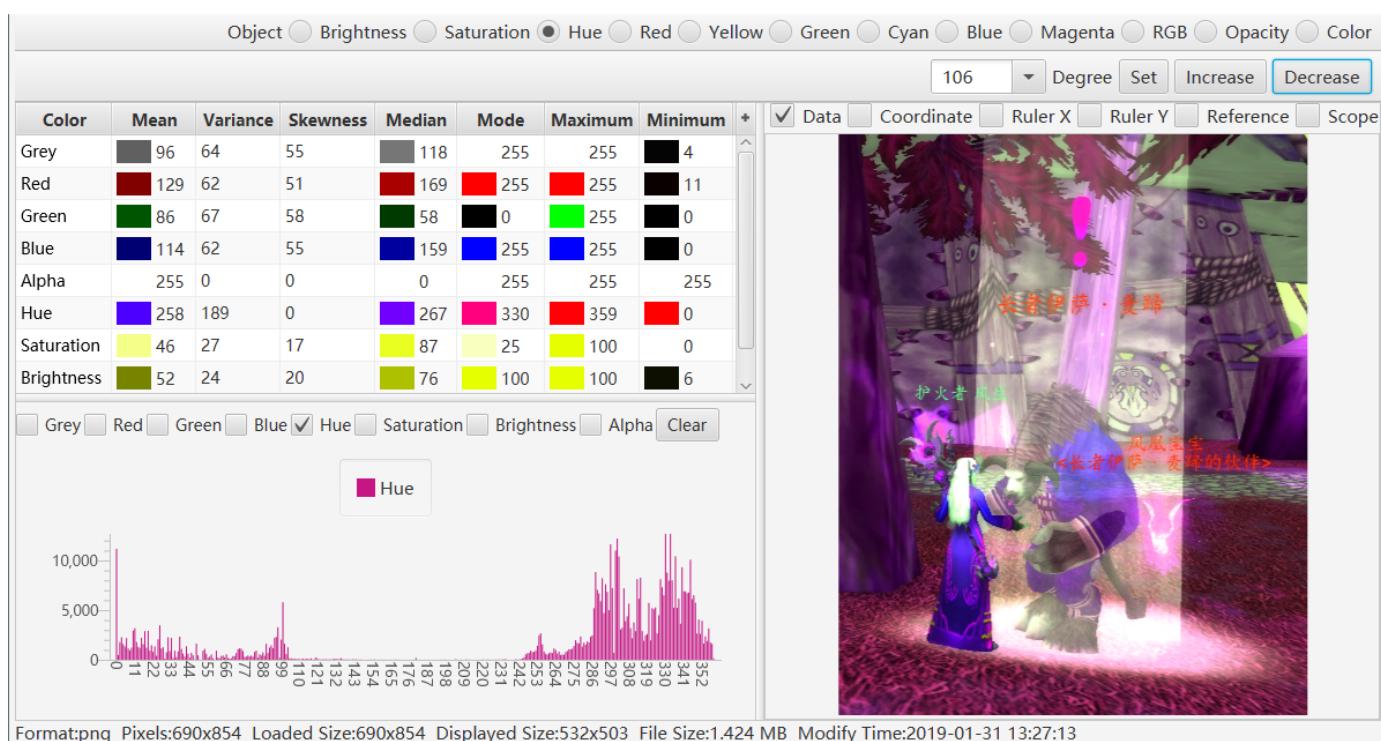
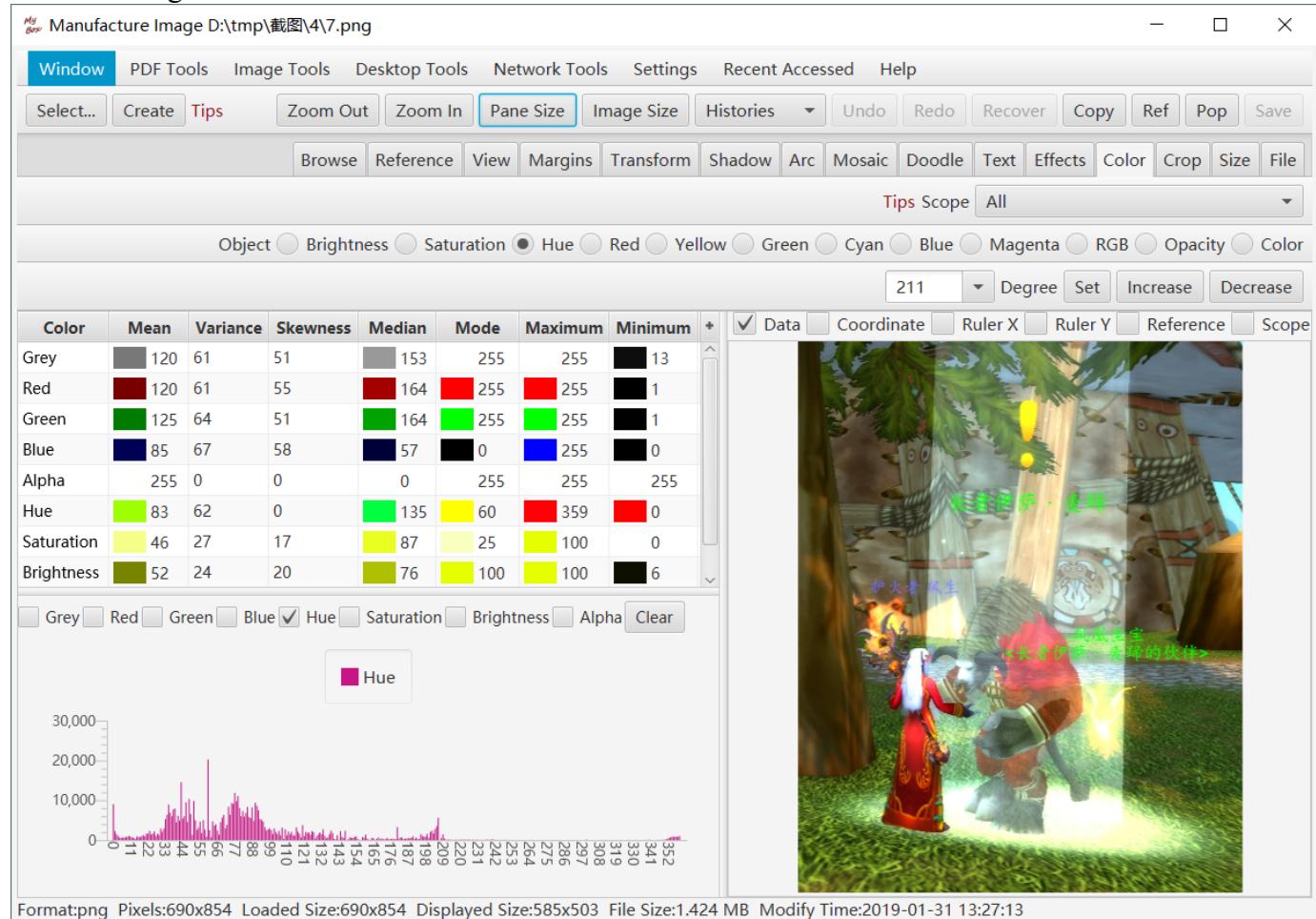
Value range of saturation is 0~100.



## 6.7.5 Hue

Operations for hue include: Set, Increase, Decrease.

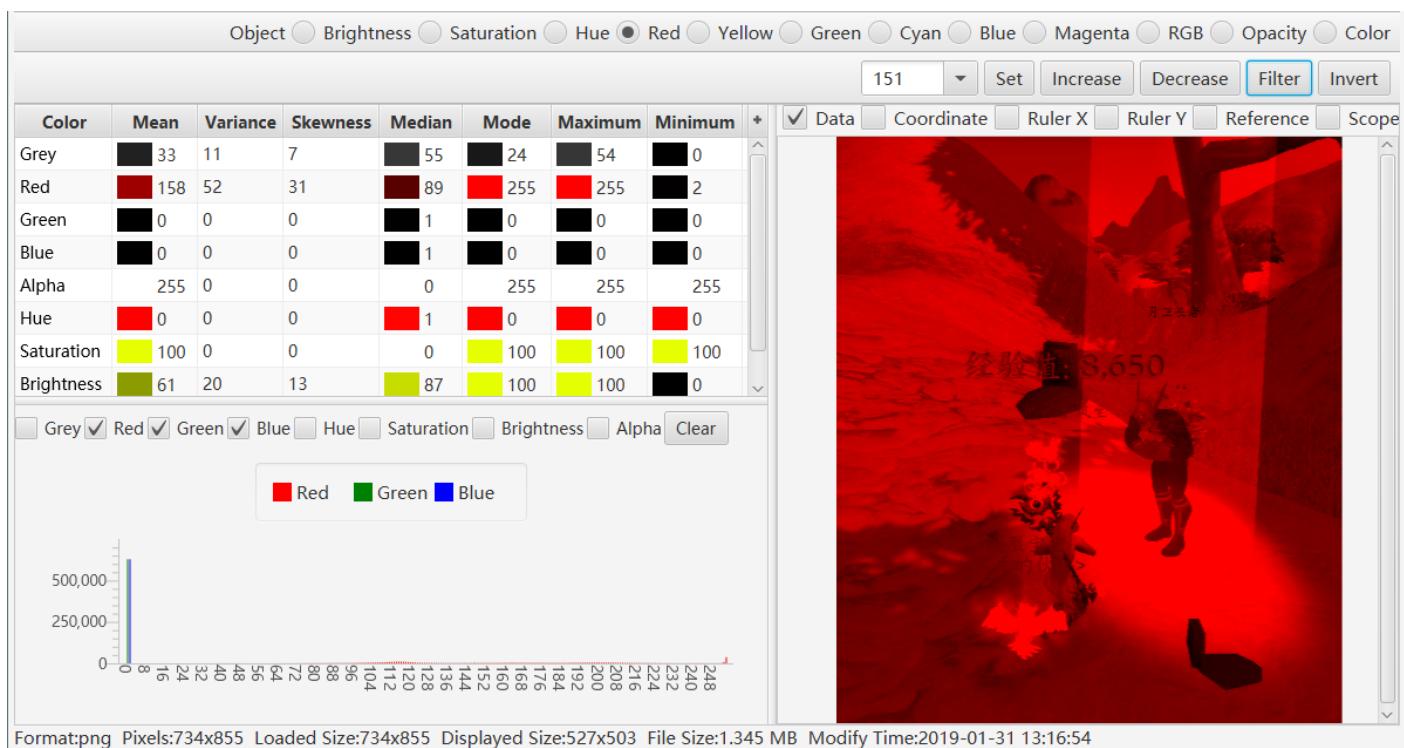
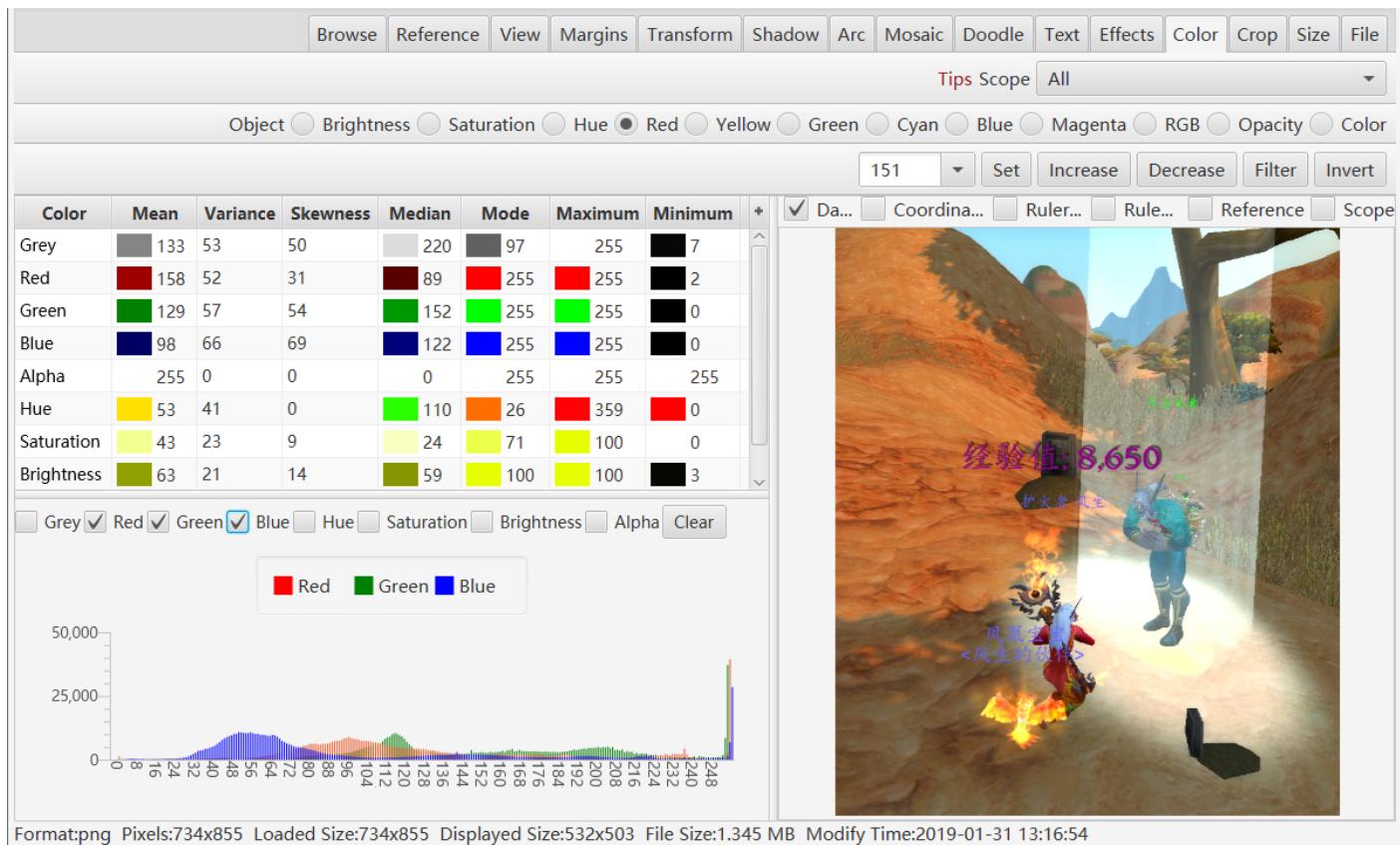
Value range of hue is 0~360.



## 6.7.6 Red

Operations for red include: Set, Increase, Decrease, Filter, Invert.

Value range of red is 0~255.



## 6.7.7 Yellow

Operations for yellow include: Set, Increase, Decrease, Filter, Invert.

Value range of yellow is 0~255.

Color palette:

Color	Mean	Variance	Skewness	Median	Mode	Maximum	Minimum
Grey	114	75	57	155	255	255	0
Red	116	80	65	0	255	255	0
Green	116	76	56	147	255	255	0
Blue	96	75	61	55	0	255	0
Alpha	255	0	0	0	255	255	255
Hue	95	71	0	161	60	359	0
Saturation	40	29	28	49	100	100	0
Brightness	50	31	20	25	100	100	0

Checkboxes (selected): Grey, Red, Green, Blue, Hue, Saturation, Brightness, Alpha.

Color selection buttons: Red, Green, Blue.

Color histogram (Y-axis 0-25,000, X-axis 8-248): A sharp peak at 151 is highlighted in red.

Image preview: A character in a blue outfit with a yellow exclamation mark above it.

File information: Format:png Pixels:563x727 Loaded Size:563x727 Displayed Size:537x494 File Size:840.625 KB Modify Time:2019-04-17 14:47:04

Color palette:

Color	Mean	Variance	Skewness	Median	Mode	Maximum	Minimum
Grey	155	65	33	193	255	255	0
Red	159	68	47	184	255	255	0
Green	161	66	25	197	255	255	0
Blue	96	75	61	55	0	255	0
Alpha	255	0	0	0	255	255	255
Hue	64	47	0	232	60	359	0
Saturation	51	27	16	66	100	100	0
Brightness	66	26	11	81	100	100	0

Checkboxes (selected): Grey, Red, Green, Blue, Hue, Saturation, Brightness, Alpha.

Color selection buttons: Red, Green, Blue.

Color histogram (Y-axis 0-100,000, X-axis 8-248): A broad peak is centered around 151, with a secondary peak at 255.

Image preview: The same character with a more intense yellow glow around the exclamation mark.

File information: Format:png Pixels:563x727 Loaded Size:563x727 Displayed Size:585x495 File Size:840.625 KB Modify Time:2019-04-17 14:47:04

## 6.7.8 Green

Operations for green include: Set, Increase, Decrease, Filter, Invert.

Value range of green is 0~255.

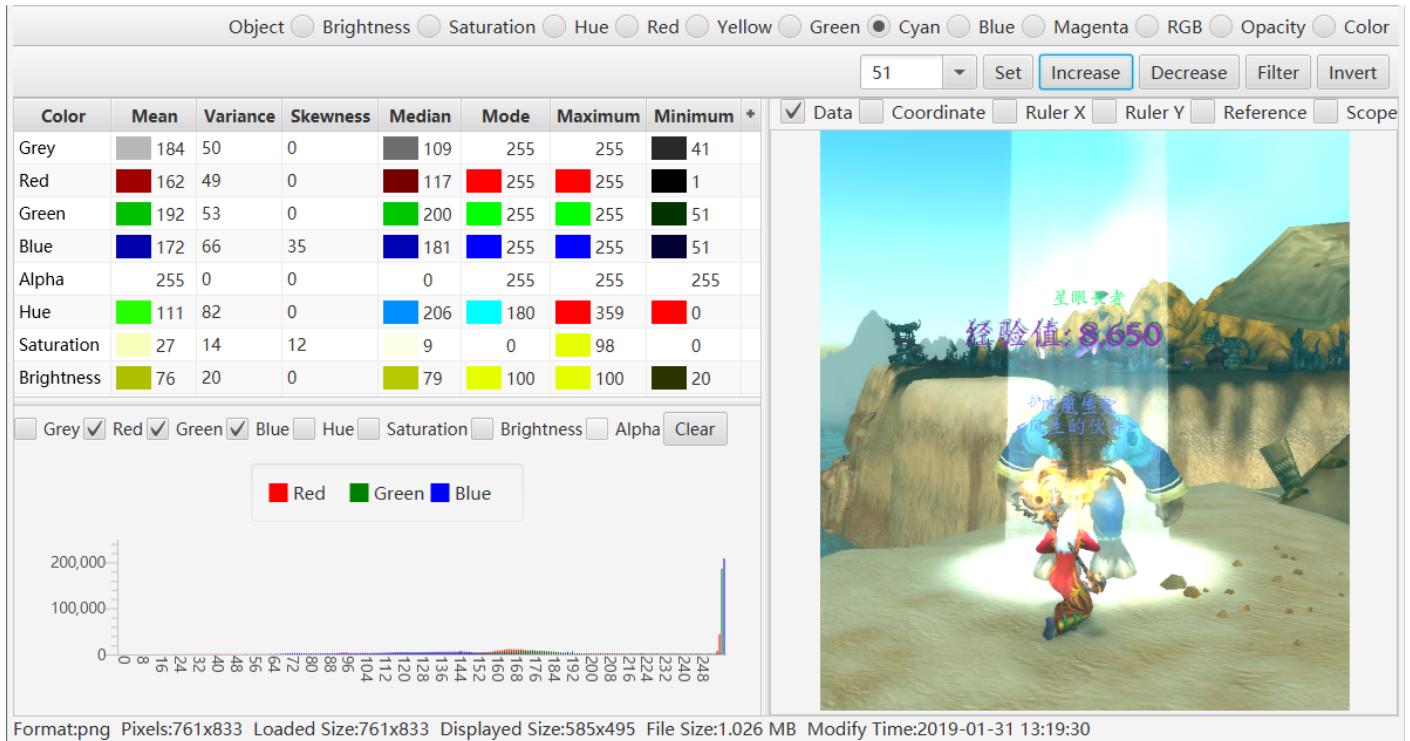
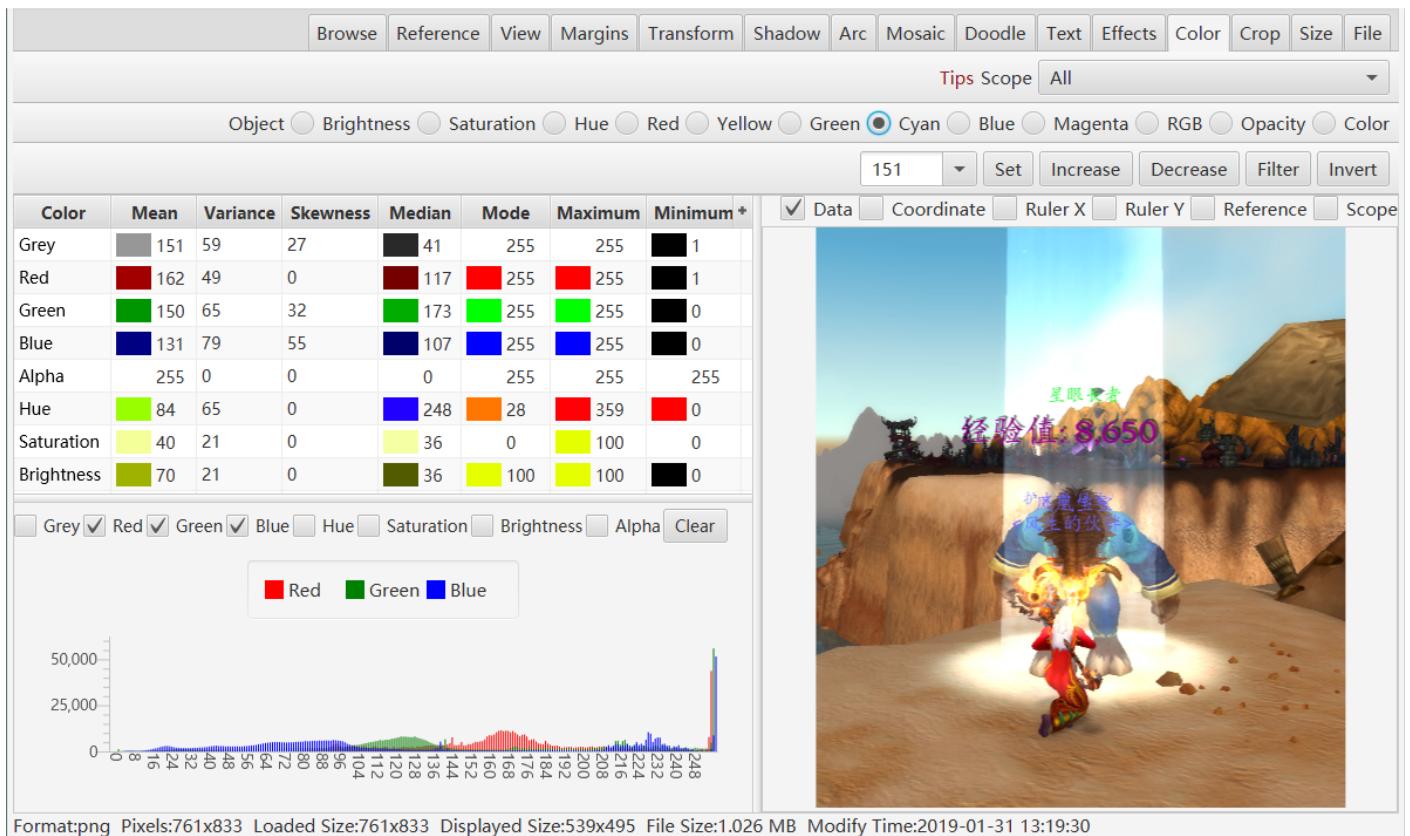
The screenshot shows the MyBox Image Tools interface with the 'Green' operation selected. The main window displays a character from a game with a green overlay effect. A color histogram at the bottom left shows the distribution of colors in the image, with a prominent peak around 50-60. The color palette on the right shows the current color settings: Mean (151), Variance (151), Skewness (Set), Median (151), Mode (Set), Maximum (151), and Minimum (151). Below the histogram are checkboxes for 'Grey', 'Red', 'Green' (checked), 'Blue', 'Hue', 'Saturation', 'Brightness', and 'Alpha'. The status bar at the bottom indicates the file format is png, pixels are 845x853, and the file size is 1.581 MB.

This screenshot shows the same MyBox Image Tools interface after applying the 'Green' operation. The character now has a green tint. The color histogram and palette remain the same as in the previous screenshot. The status bar at the bottom indicates the file format is png, pixels are 845x853, and the file size is 1.581 MB.

## 6.7.9 Cyan

Operations for cyan include: Set, Increase, Decrease, Filter, Invert.

Value range of cyan is 0~255.



## 6.7.10 Blue

Operations for blue include: Set, Increase, Decrease, Filter, Invert.

Value range of blue is 0~255.

The screenshot shows the MyBox Image Tools interface with the 'Blue' operation selected. The top menu bar includes 'Browse', 'Reference', 'View', 'Margins', 'Transform', 'Shadow', 'Arc', 'Mosaic', 'Doodle', 'Text', 'Effects', 'Color', 'Crop', 'Size', and 'File'. Below the menu is a toolbar with 'Tips Scope All' and various color selection buttons. A color palette table lists statistics for various colors. A histogram at the bottom left shows the distribution of blue values. The main workspace displays a scene from a game or movie with a character on a mechanical mount. The 'Blue' operation has been applied, resulting in a color inversion where the sky is now dark and the ground is bright. Text labels in the scene are visible in Chinese: '护火者 风生' and '凤凰宝宝 <风生的伙伴>'.

Color	Mean	Variance	Skewness	Median	Mode	Maximum	Minimum
Grey	114	66	52	22	65	255	1
Red	110	52	50	45	84	255	2
Green	117	72	53	22	255	255	0
Blue	109	91	66	71	33	255	0
Alpha	255	0	0	0	255	255	255
Hue	99	75	0	254	26	359	0
Saturation	51	18	0	75	58	100	0
Brightness	56	28	9	47	36	100	0

Format:png Pixels:724x793 Loaded Size:724x793 Displayed Size:535x495 File Size:836.062 KB Modify Time:2019-01-31 13:01:09

The screenshot shows the MyBox Image Tools interface with the 'Invert' operation selected. The top menu bar and toolbar are identical to the previous screenshot. The color palette table shows statistics for various colors. The histogram at the bottom left shows the distribution of blue values. The main workspace displays the same scene as the first screenshot, but the 'Invert' operation has been applied, resulting in a color inversion where the sky is now bright and the ground is dark. The text labels '护火者 风生' and '凤凰宝宝 <风生的伙伴>' are still visible.

Color	Mean	Variance	Skewness	Median	Mode	Maximum	Minimum
Grey	117	54	44	198	80	253	19
Red	110	52	50	45	84	255	2
Green	117	72	53	22	255	255	0
Blue	145	91	0	184	222	255	0
Alpha	255	0	0	0	255	255	255
Hue	182	133	0	23	251	359	0
Saturation	73	14	0	47	79	100	0
Brightness	82	10	0	52	87	100	35

Format:png Pixels:724x793 Loaded Size:724x793 Displayed Size:533x495 File Size:836.062 KB Modify Time:2019-01-31 13:01:09

## 6.7.11 Magenta

Operations for magenta include: Set, Increase, Decrease, Filter, Invert.

Value range of magenta is 0~255.

Format:png Pixels:668x755 Loaded Size:668x755 Displayed Size:532x495 File Size:1.135 MB Modify Time:2019-04-17 15:06:10

Color	Mean	Variance	Skewness	Median	Mode	Maximum	Minimum
Grey	116	77	56	132	255	255	1
Red	158	78	0	187	255	255	6
Green	106	80	65	171	255	255	0
Blue	96	82	66	184	255	255	0
Alpha	255	0	0	0	255	255	255
Hue	95	78	0	210	0	359	0
Saturation	49	28	8	19	0	100	0
Brightness	62	31	0	16	100	100	2

Color Selection: Red, Green, Blue

Color Histogram:

Red Channel Histogram (0-255):

Pixel Value	Count
8	10000
16	10000
32	10000
48	10000
64	10000
80	10000
96	10000
104	10000
112	10000
120	10000
128	10000
136	10000
144	10000
152	10000
160	10000
168	10000
176	10000
184	10000
192	10000
200	10000
208	10000
216	10000
224	10000
232	10000
240	10000
248	10000

Format:png Pixels:668x755 Loaded Size:668x755 Displayed Size:585x495 File Size:1.135 MB Modify Time:2019-04-17 15:06:10

Color	Mean	Variance	Skewness	Median	Mode	Maximum	Minimum
Grey	92	72	58	99	226	226	0
Red	69	61	40	117	0	154	0
Green	106	80	65	171	255	255	0
Blue	35	49	52	130	0	154	0
Alpha	255	0	0	0	255	255	255
Hue	99	72	0	144	120	358	0
Saturation	83	22	0	88	100	100	0
Brightness	42	31	24	70	100	100	0

Color Selection: Red, Green, Blue

Color Histogram:

Red Channel Histogram (0-255):

Pixel Value	Count
8	100000
16	100000
32	100000
48	100000
64	100000
80	100000
96	100000
104	100000
112	100000
120	100000
128	100000
136	100000
144	100000
152	100000
160	100000
168	100000
176	100000
184	100000
192	100000
200	100000
208	100000
216	100000
224	100000
232	100000
240	100000
248	100000

## 6.7.12 RGB

Operations for RGB include: Set, Increase, Decrease.

Value range of RGB is 0~255.

Color	Mean	Variance	Skewness	Median	Mode	Maximum	Minimum
Grey	118	46	33	57	73	255	3
Red	135	71	31	215	47	255	5
Green	116	45	32	196	78	255	1
Blue	95	44	0	55	103	255	0
Alpha	255	0	0	0	255	255	255
Hue	103	78	0	95	206	359	0
Saturation	50	21	17	23	55	100	0
Brightness	60	20	13	63	40	100	1

Format:png Pixels:795x842 Loaded Size:795x842 Displayed Size:533x495 File Size:973.957 KB Modify Time:2019-04-10 17:51:55

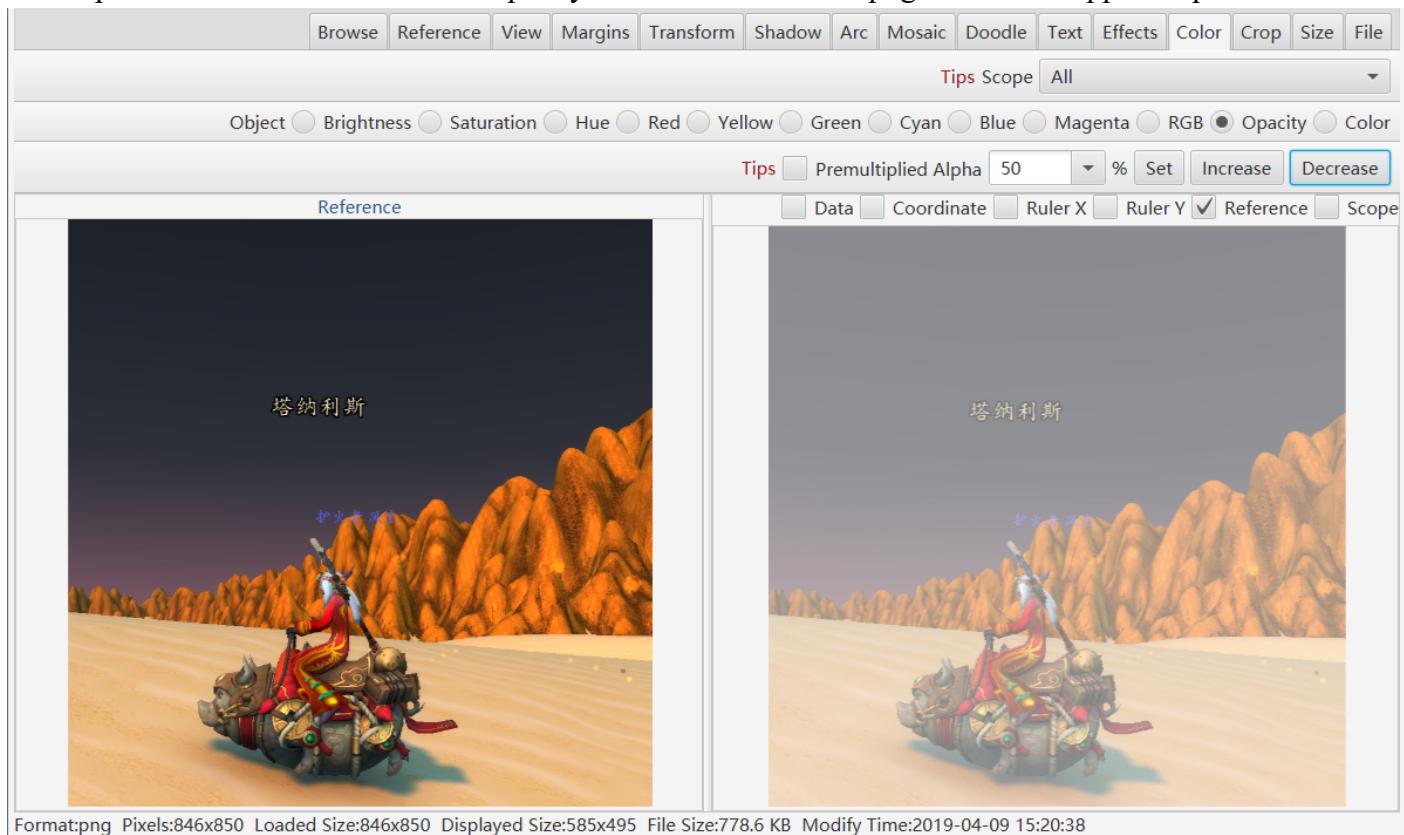
Color	Mean	Variance	Skewness	Median	Mode	Maximum	Minimum
Grey	168	45	29	194	124	255	54
Red	181	64	0	174	255	255	56
Green	167	45	30	102	129	255	52
Blue	146	44	0	104	154	255	51
Alpha	255	0	0	0	255	255	255
Hue	105	79	0	90	206	359	0
Saturation	36	16	15	39	37	79	0
Brightness	78	17	0	47	100	100	21

Format:png Pixels:795x842 Loaded Size:795x842 Displayed Size:531x495 File Size:973.957 KB Modify Time:2019-04-10 17:51:55

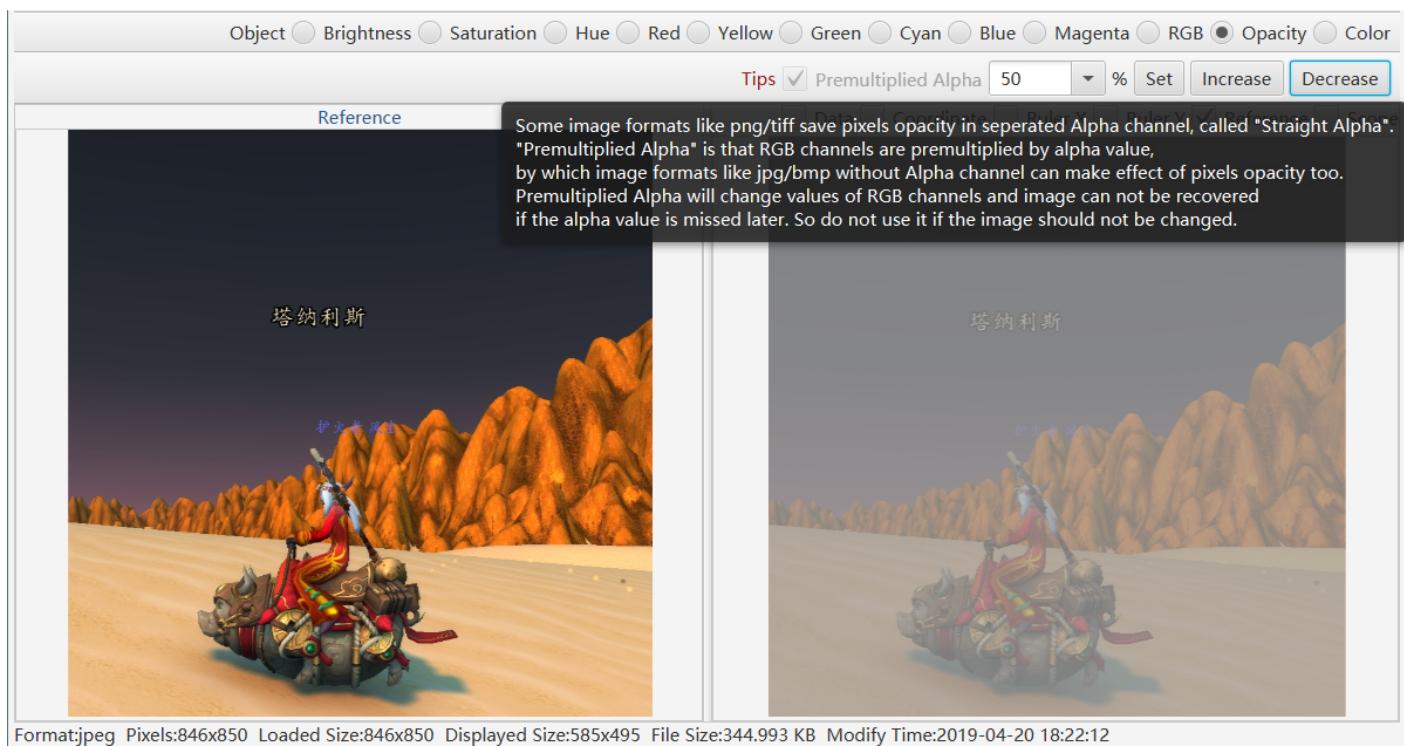
## 6.7.13 Opacity

Operations for opacity include: Set, Increase, Decrease. Value range of green is 0~100.

Alpha channel can be written for opacity effect to formats like png/tiff which support Alpha.



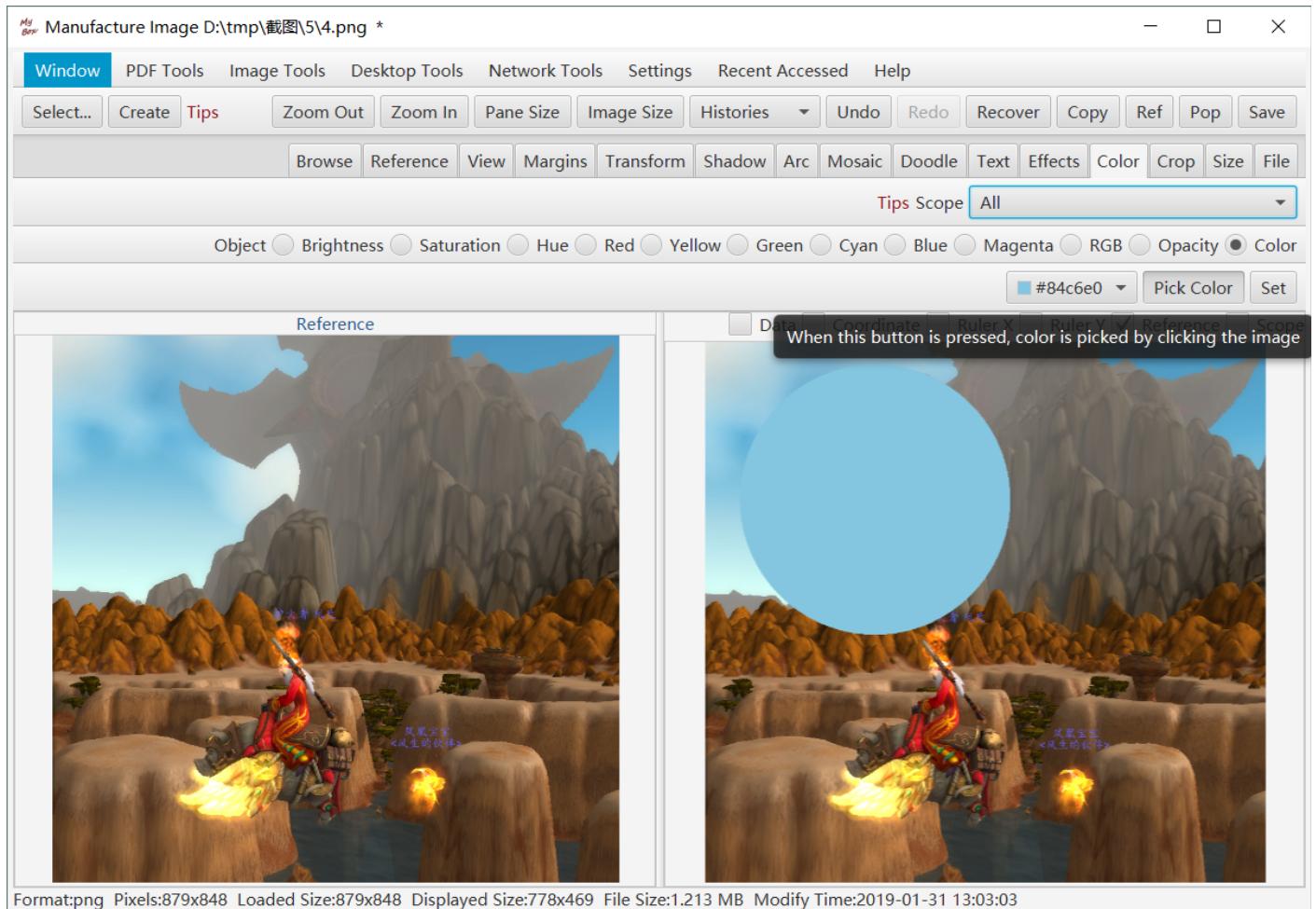
Premultiplied Alpha is applied for formats like jpg/bmp which have not alpha channel. Notice: This technique will write all color channels and image can not be recovered if opacity value is missed later.



## 6.7.14 Color

Operations for green include: Set.

Click button “Pick Color” to get color by clicking image.

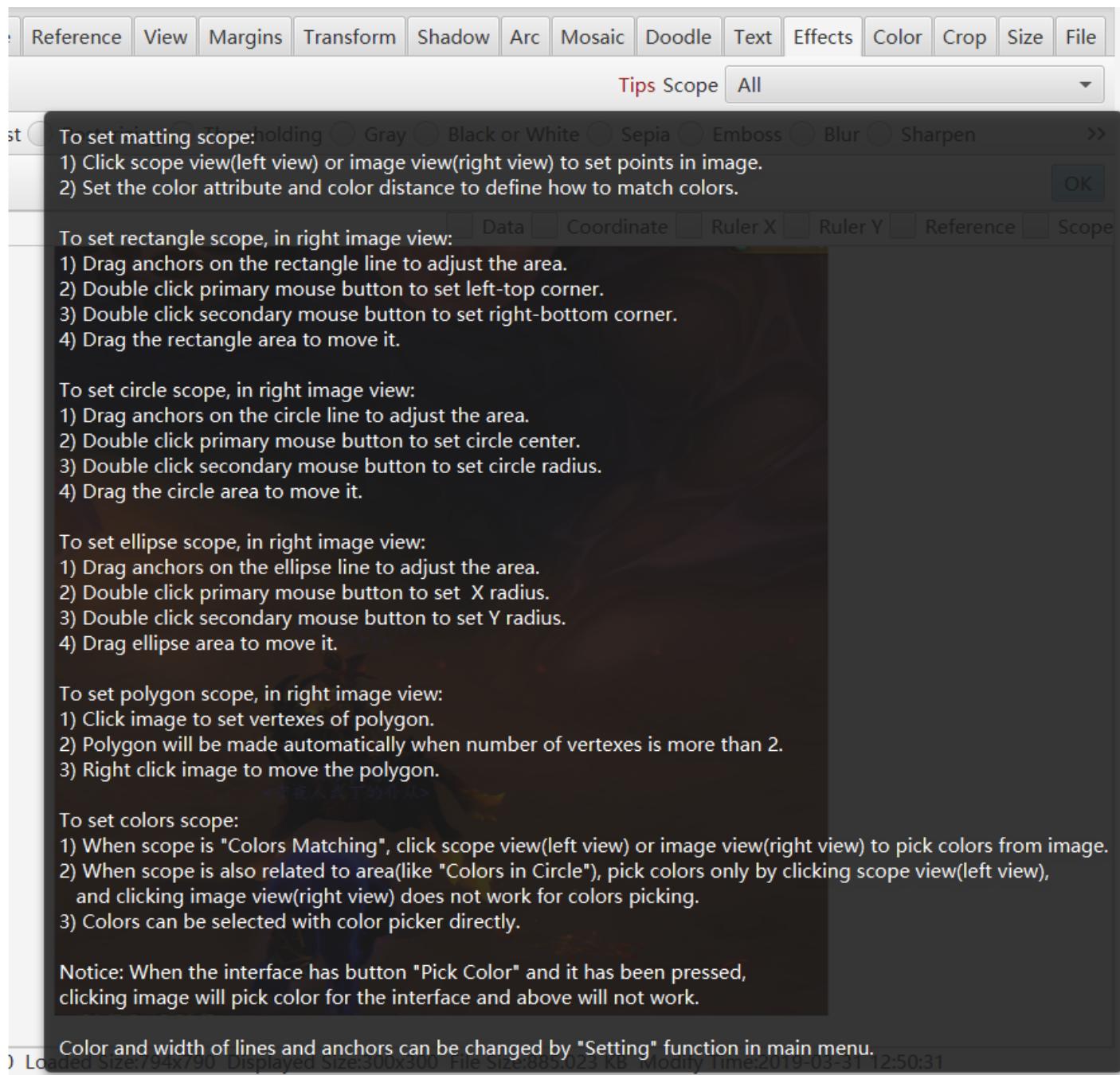


## 6.8 Effects

### 6.8.1 Select Scope

Scope can be selected to handle image color. “Scope” is mentioned in a special section in the end of this chapter.

Move mouse upon the red label “Tips ”beside the scope selector and information will be popped:

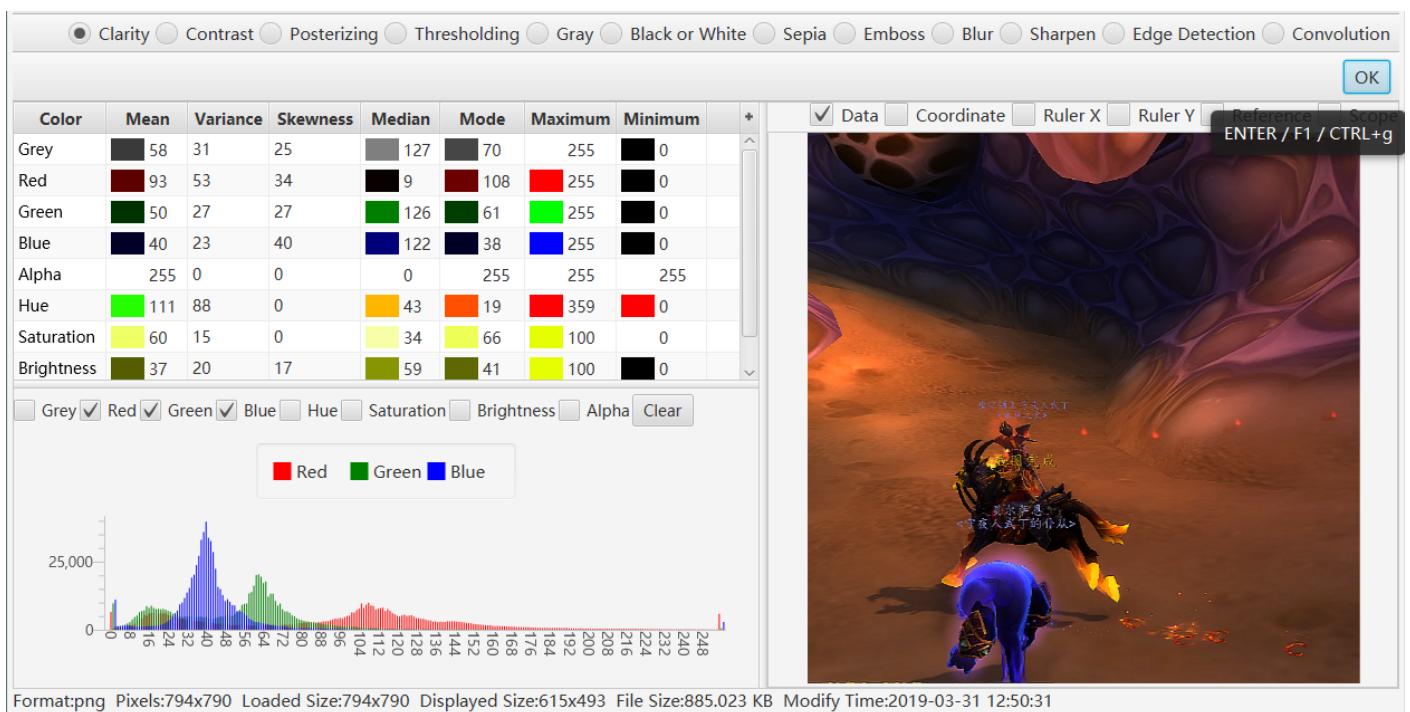
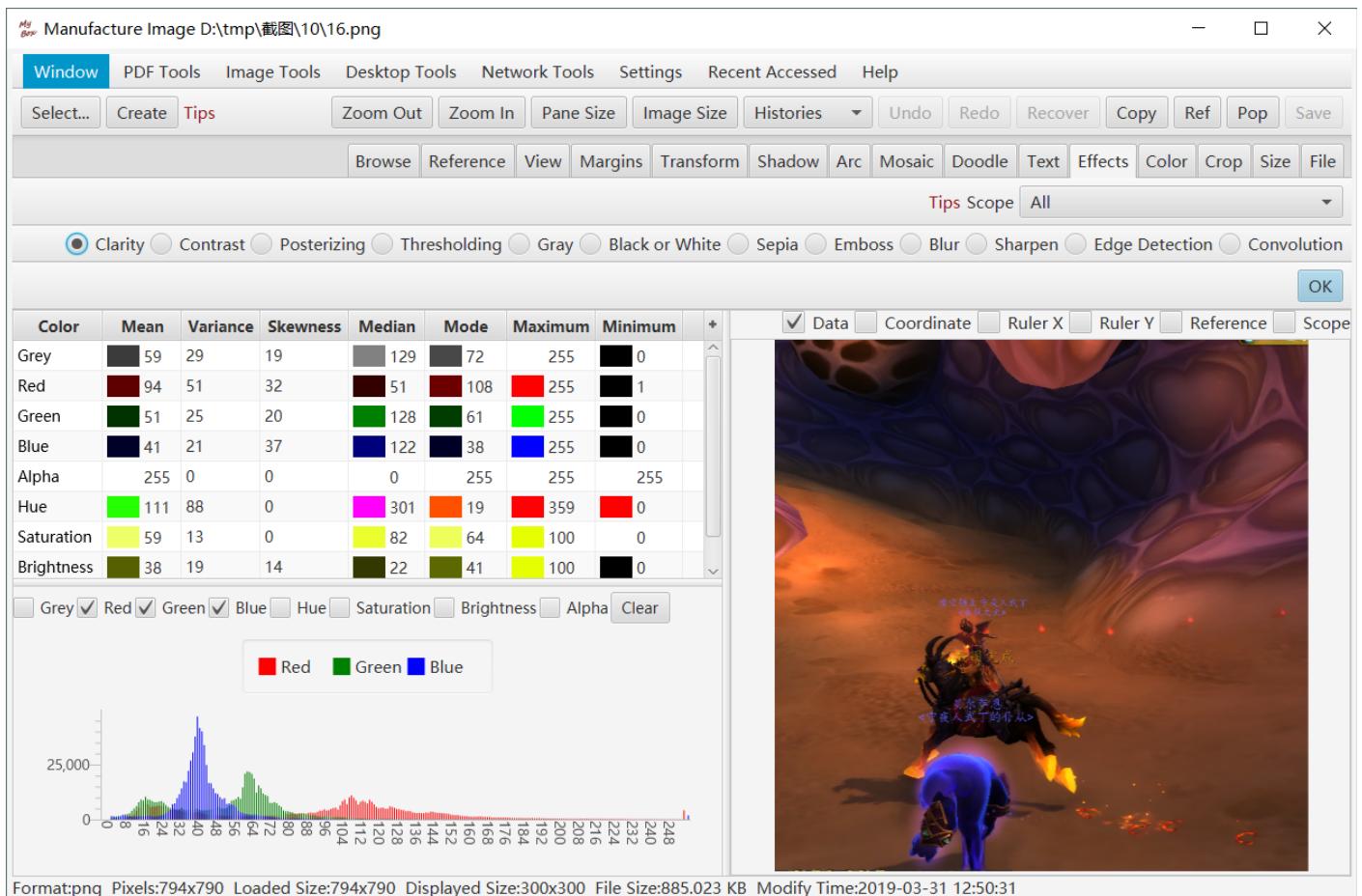


### 6.8.2 Display Data

When “Data” is checked, staticic data will be shown, including average, variance, skewness, median, mode, minimum, maximum of occurانce of each color channel, and their histograms.

### 6.8.3 Clarity

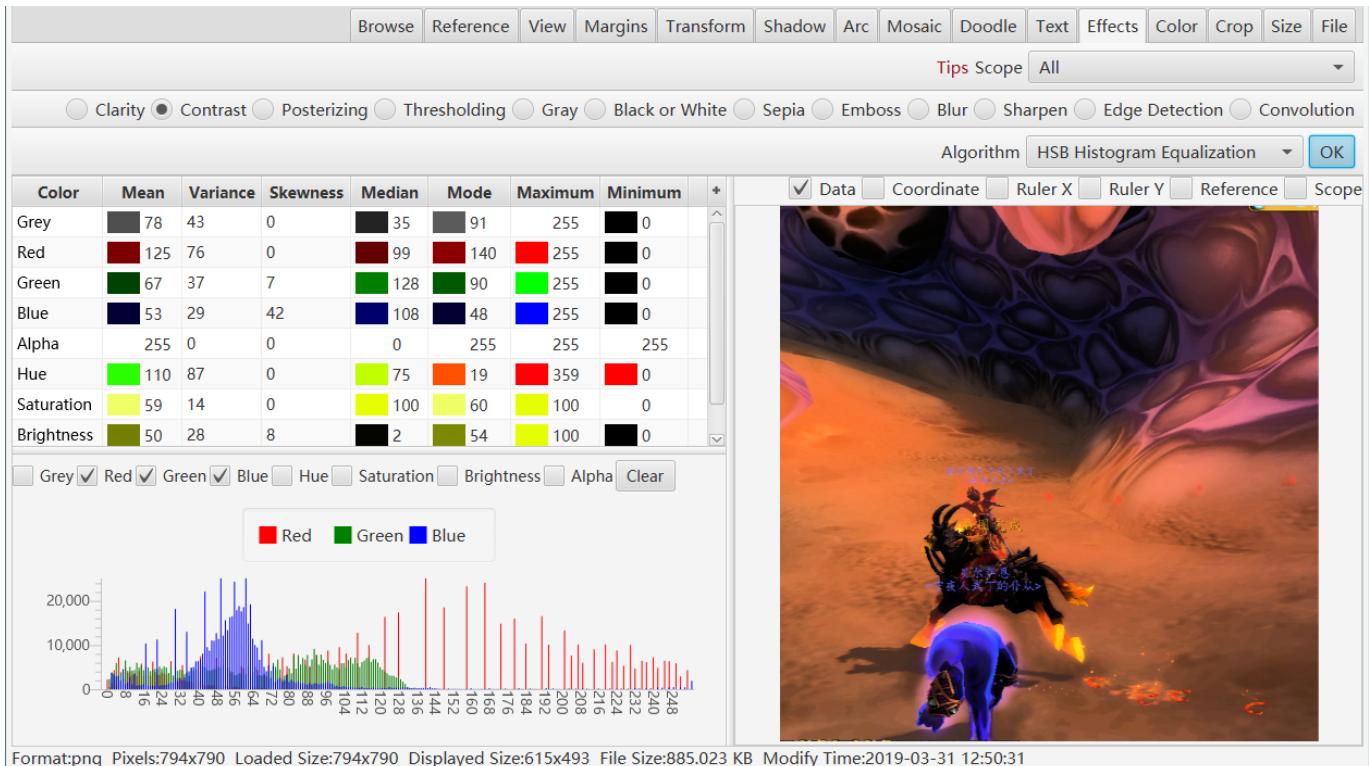
Click button “OK” or press ENTER to handle the image with algorithm “Unsharp Masking”.



## 6.8.4 Contrast

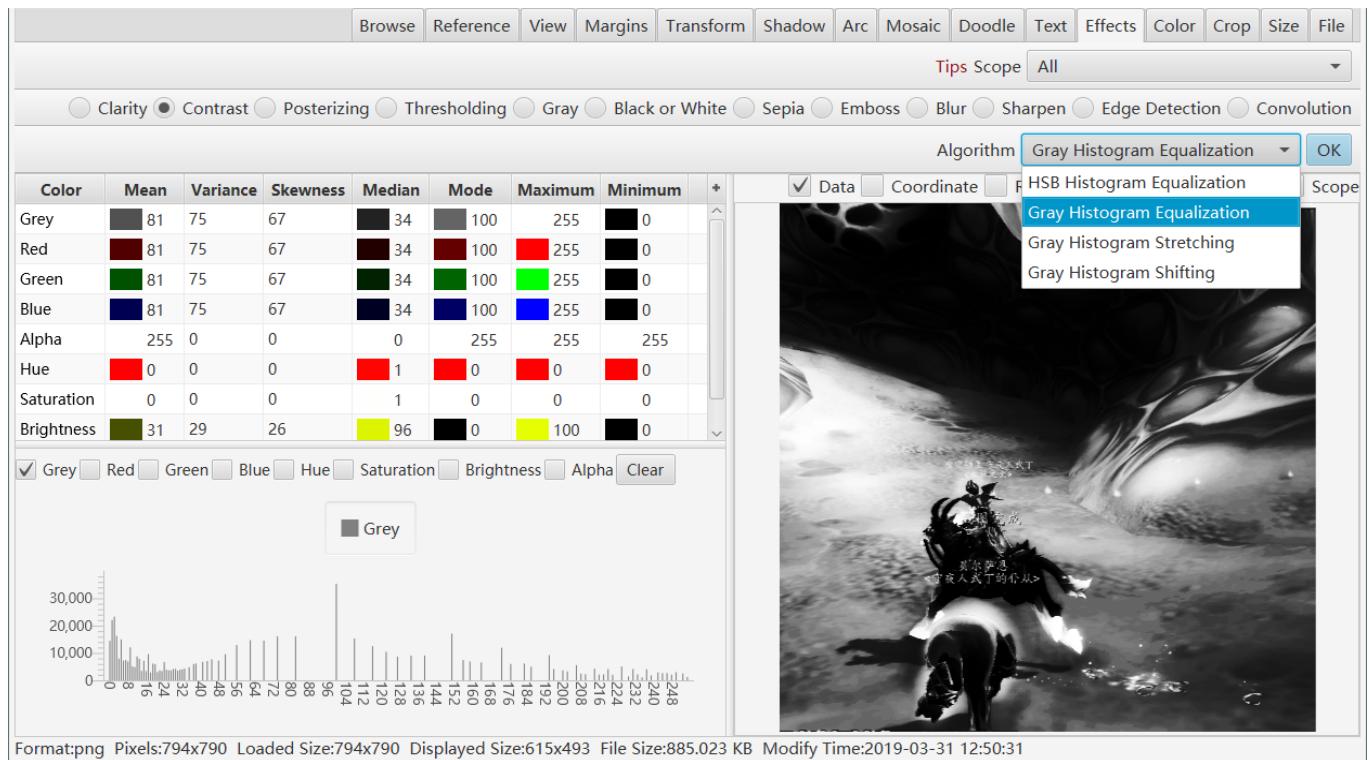
### 6.8.4.1 HSB Histogram Equalization

Select algorithm “HSB Histogram Equalization”, and click button “OK” or press ENTER.



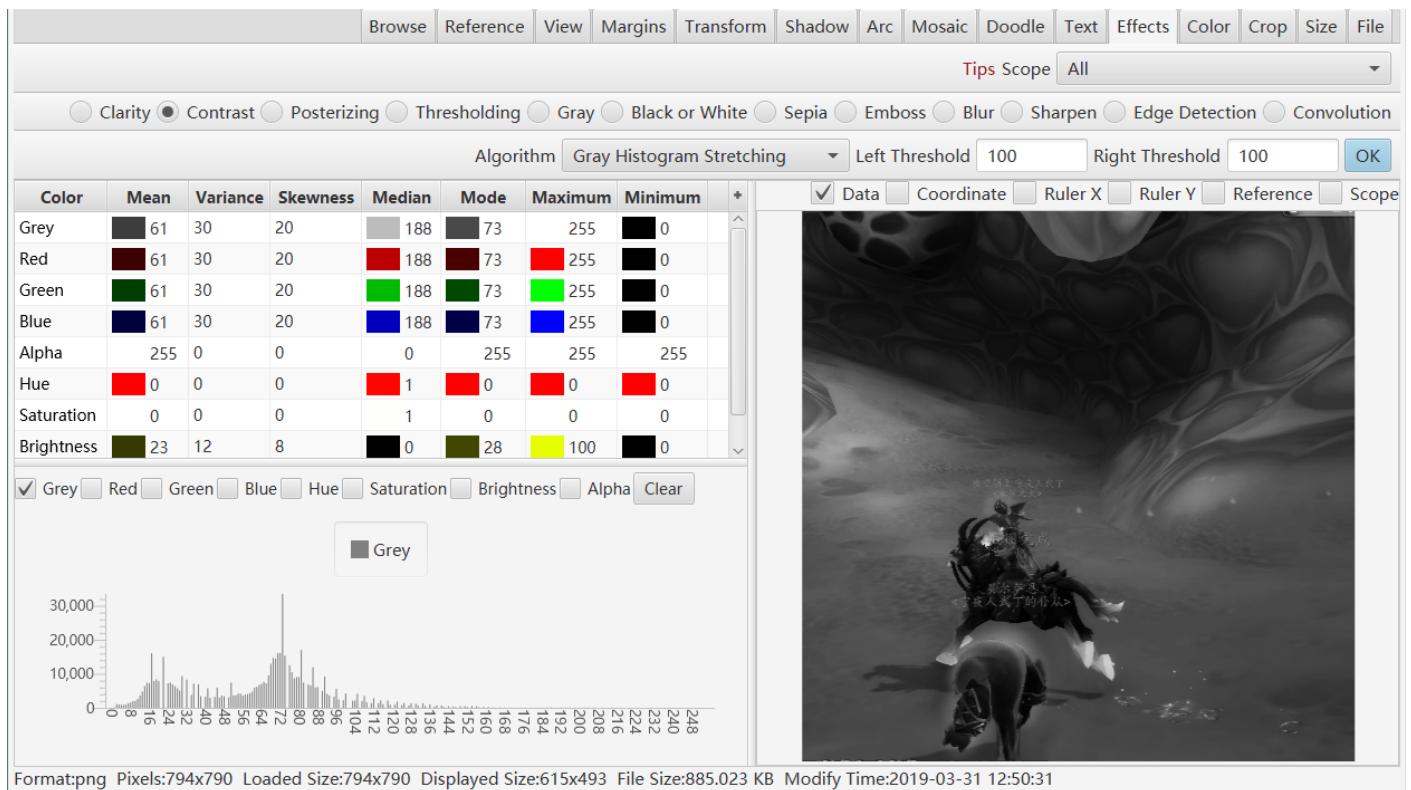
### 6.8.4.2 Gray Histogram Equalization

Select algorithm “Gray Histogram Equalization”, and click button “OK” or press ENTER.



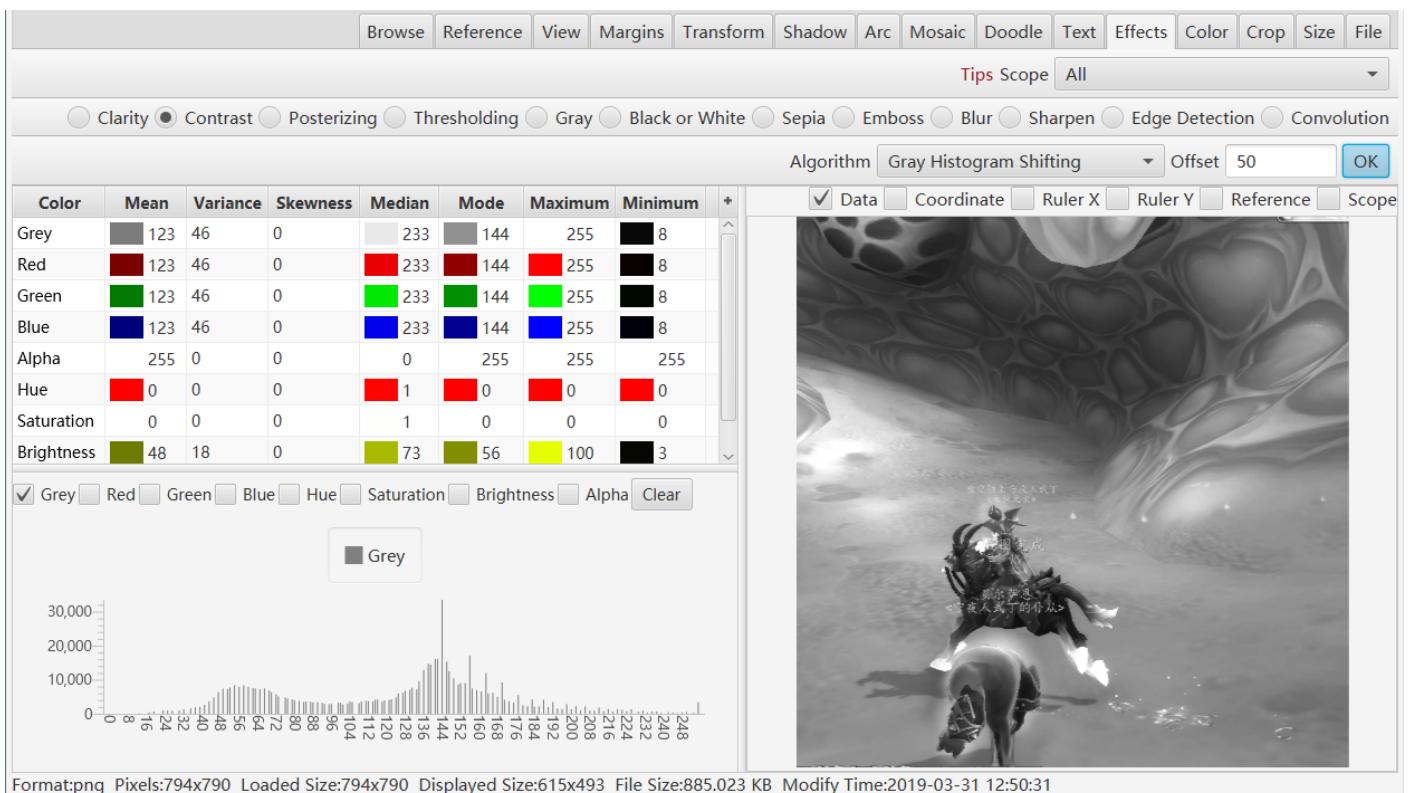
### 6.8.4.3 Gray Histogram Stretching

Select algorithm “Gray Histogram Stretching”, and click button “OK” or press ENTER.



### 6.8.4.4 Gray Histogram Shifting

Select algorithm “Gray Histogram Shifting”, and click button “OK” or press ENTER.



## 6.8.5 Posterized(Reduce Colors)

### 6.8.5.1 RGB Uniform Quantization

Select algorithm “RGB Uniform Quantization”, set number of colors, check whether “Dithering”, and click button “OK” or press ENTER.

Below is the comparison of quantization with dithering and without dithering.

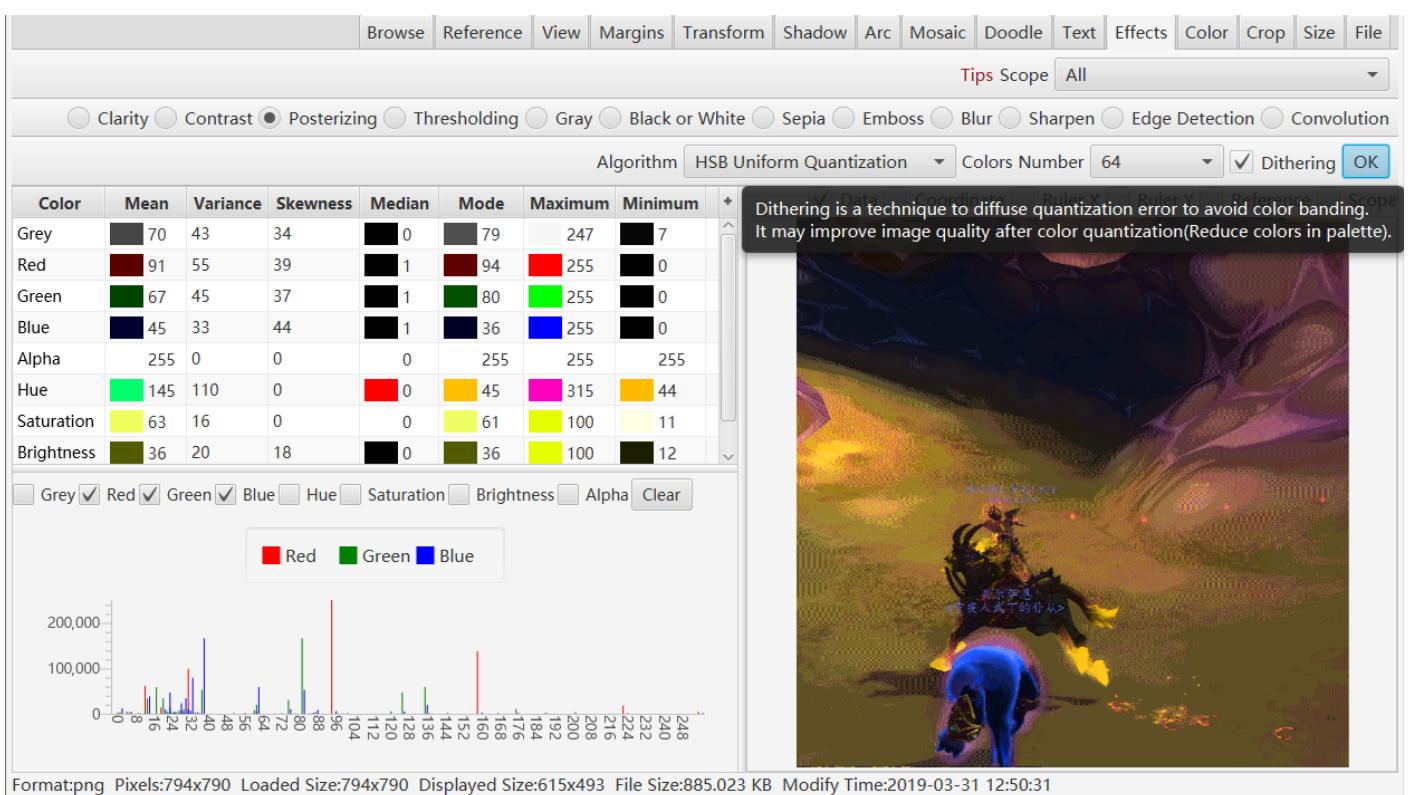
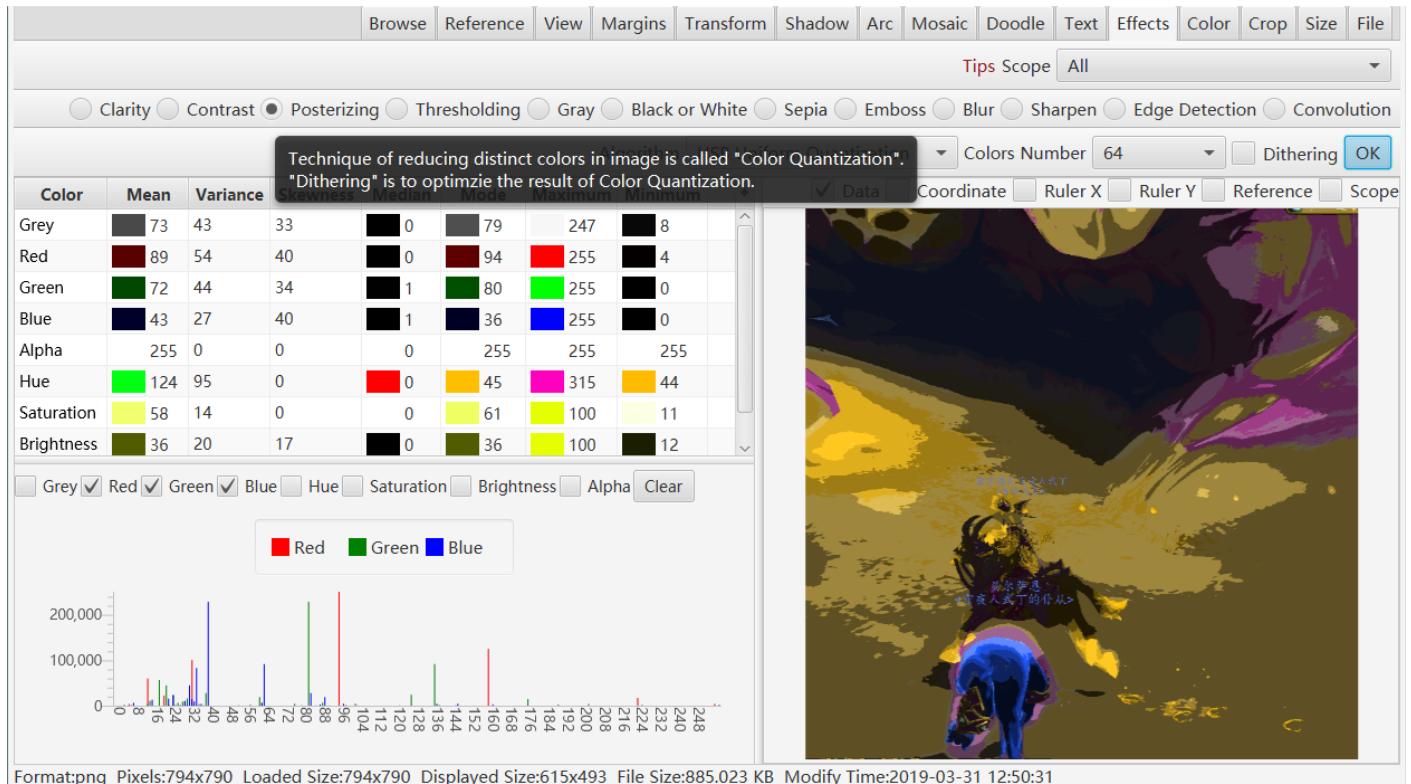
Screenshot of MyBox Image Tools showing the "Posterized(Reduce Colors)" feature. The interface includes a toolbar at the top with various tools like Browse, Reference, View, Margins, Transform, Shadow, Arc, Mosaic, Doodle, Text, Effects, Color, Crop, Size, and File. Below the toolbar is a status bar with "Tips Scope All". A series of radio buttons for image processing algorithms are shown, with "Posterizing" selected. The main area contains a table of color statistics and a histogram. The histogram shows the frequency distribution of pixel values from 0 to 255. To the right is a preview window displaying a posterized version of a scene from World of Warcraft. The posterized image has a distinct blocky, low-color palette appearance. At the bottom, there is a message bar with file details: Format:png, Pixels:794x790, Loaded Size:794x790, Displayed Size:615x493, File Size:885.023 KB, and Modify Time:2019-03-31 12:50:31.

Screenshot of MyBox Image Tools showing the same "Posterized(Reduce Colors)" feature, but with the "Dithering" checkbox checked. The preview window on the right shows a much smoother and more visually similar posterized image compared to the one without dithering. The histogram also shows a more continuous distribution of pixel values. The message bar at the bottom remains the same as the previous screenshot.

### 6.8.5.2 HSB Uniform Quantization

Select algorithm “HSB Uniform Quantization”, set number of colors, check whether “Dithering”, and click button “OK” or press ENTER.

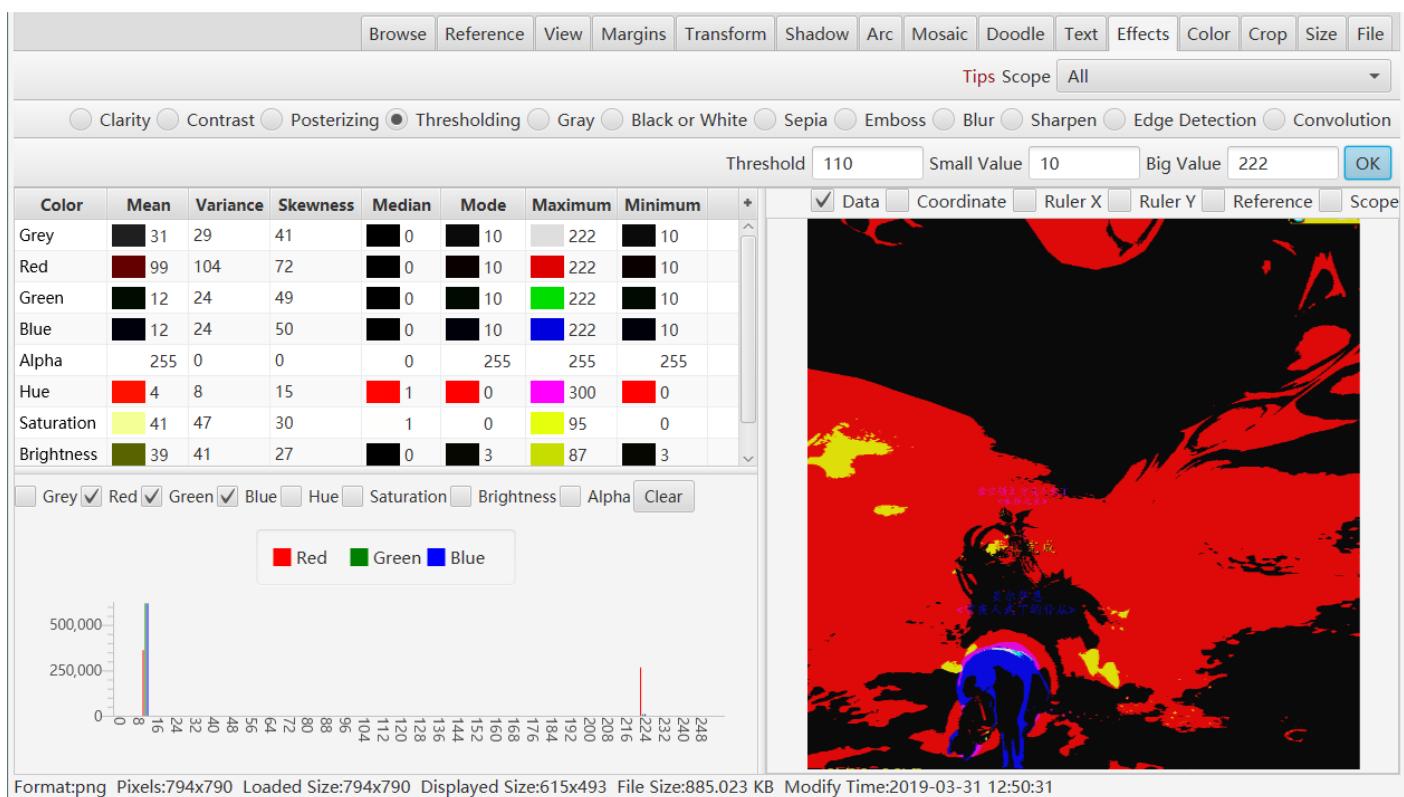
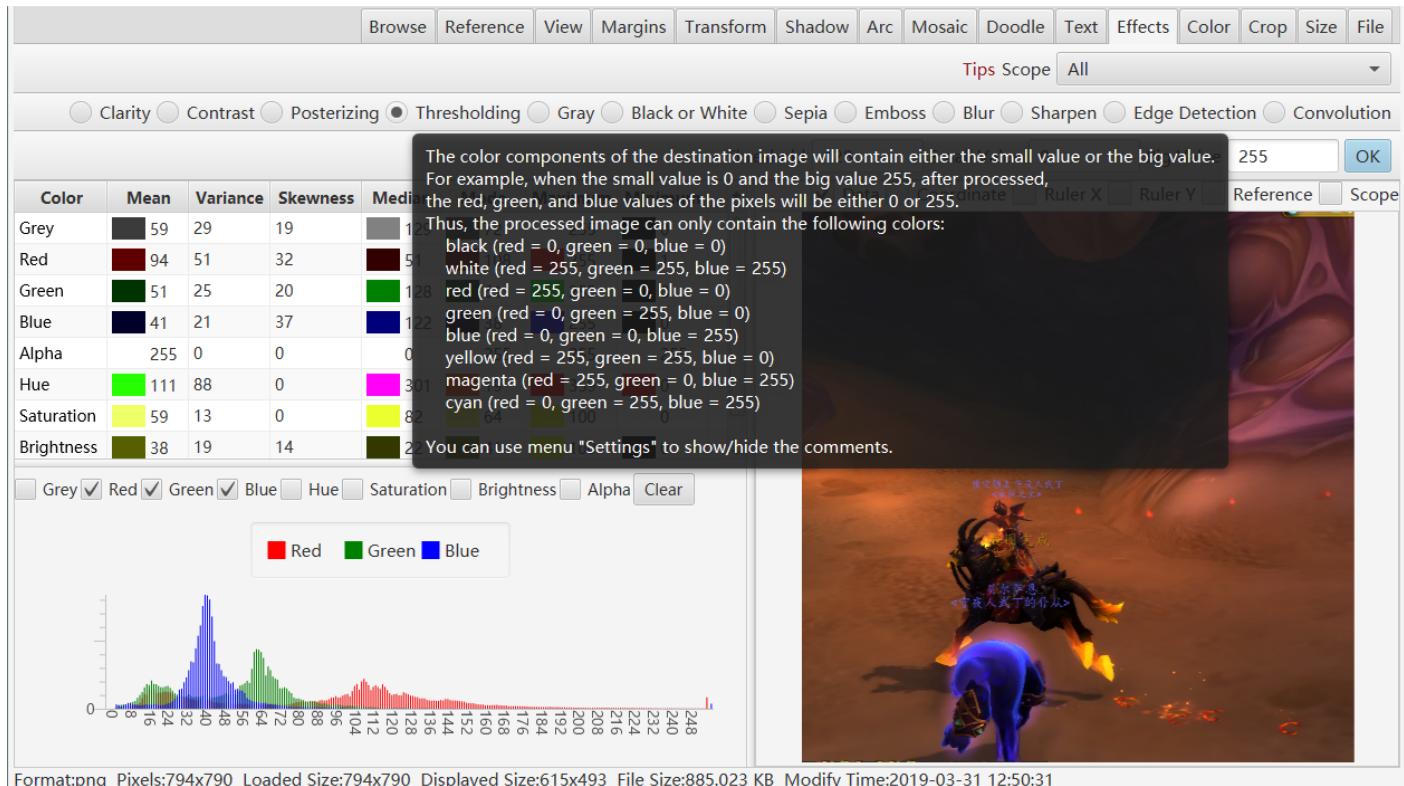
Below is the comparison of quantization with dithering and without dithering.



## 6.8.6 Thresholding

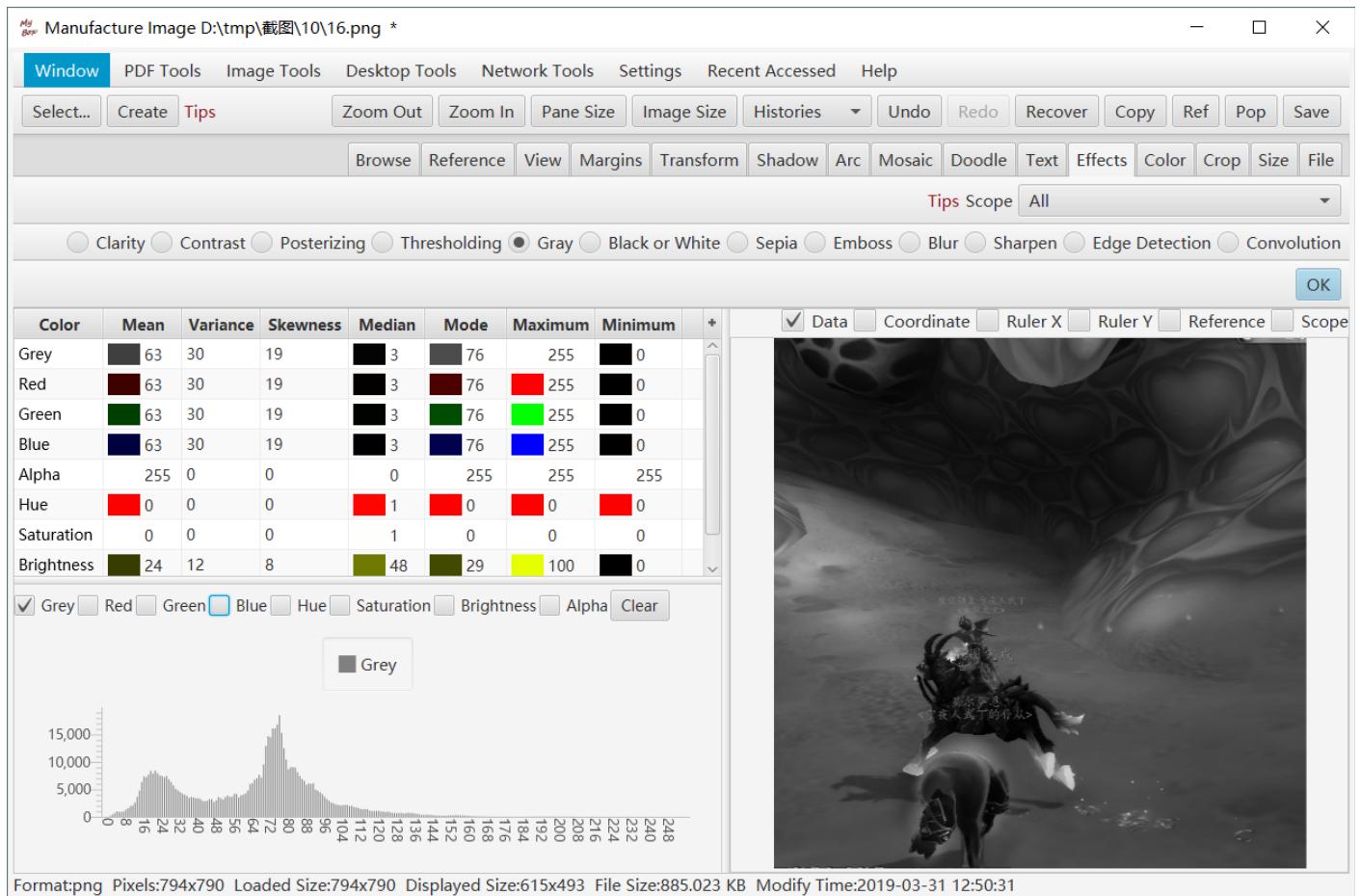
What's "Thresholding"? The color components of the destination image will contain either the small value or the big value. For example, when the small value is 0 and the big value 255, after processed, the red, green, and blue values of the pixels will be either 0 or 255. Following article can be referred:

<https://www.javaworld.com/article/2076764/java-se/image-processing-with-java-2d.html?page=2>



## 6.8.7 Gray

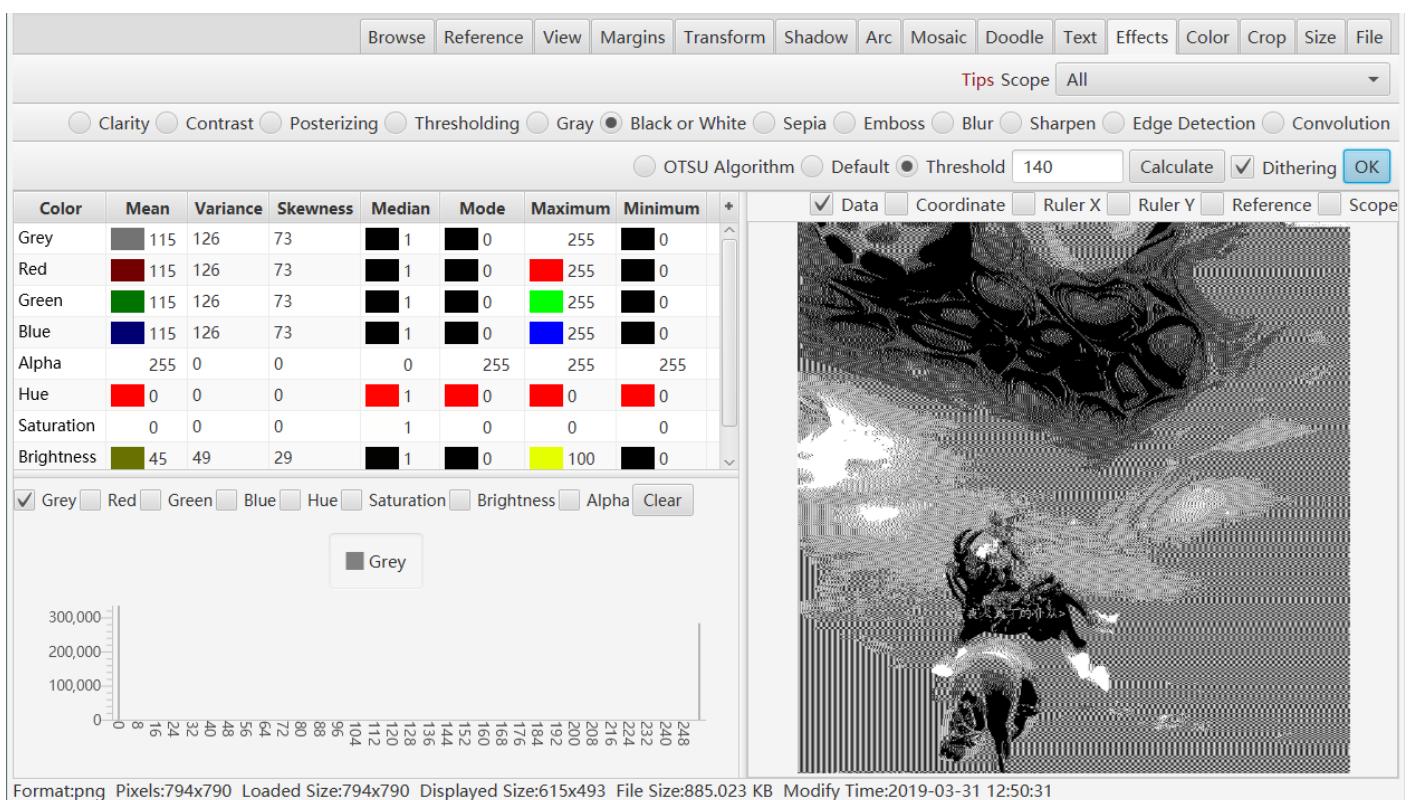
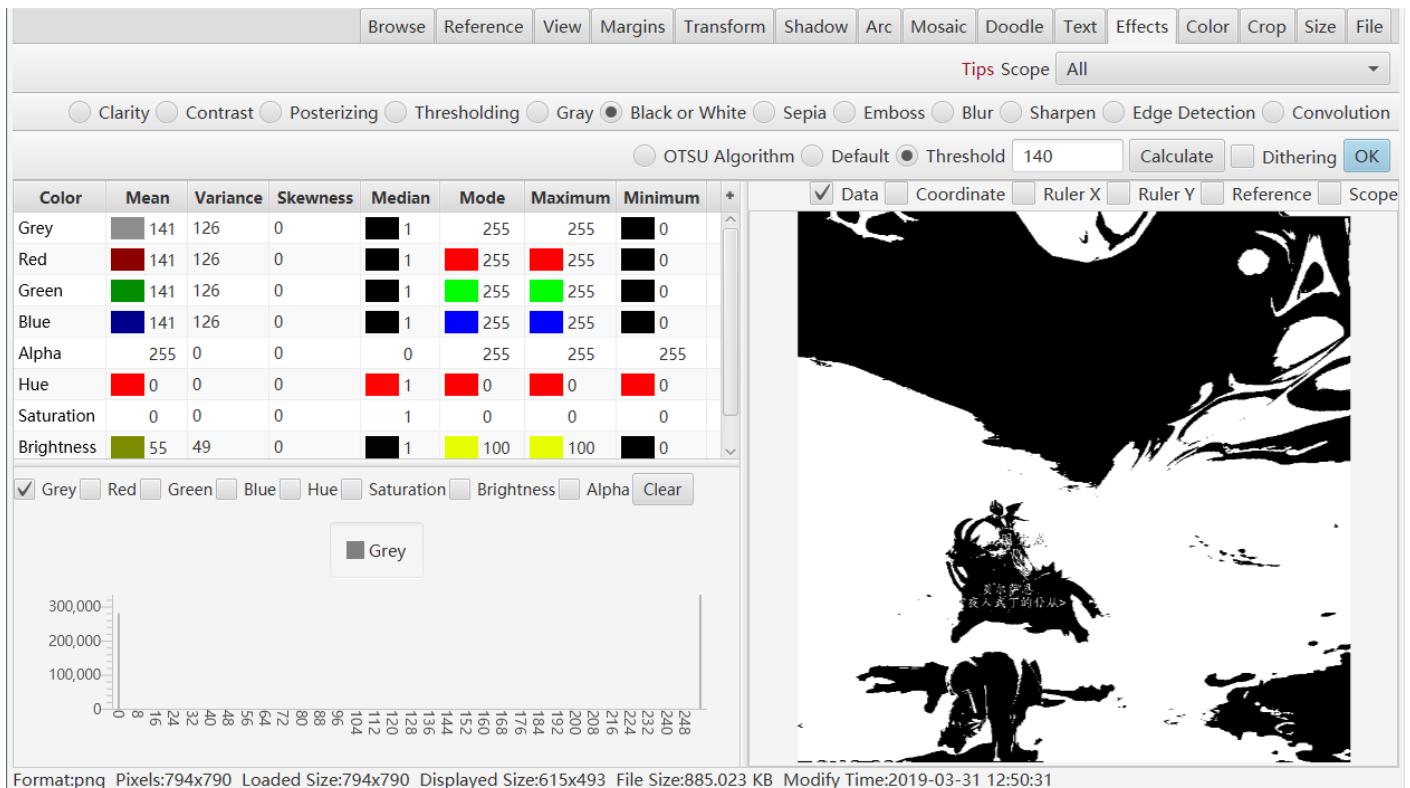
Click button “OK” or press ENTER.



## 6.8.8 Black Or White

Select OTSU or default algorithm to calculate threshold automatically, or input the value. Select whether dithering. Click button “OK” or press ENTER.

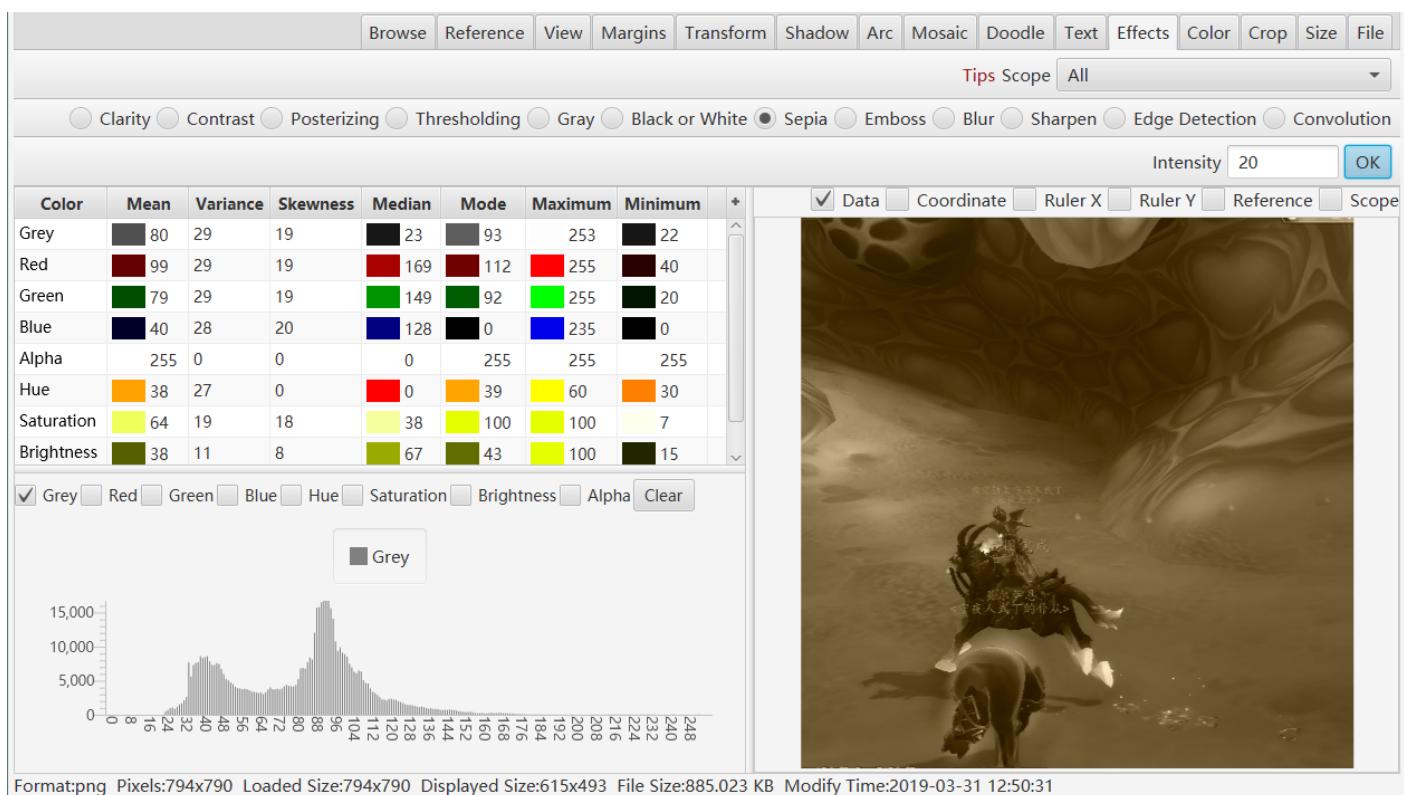
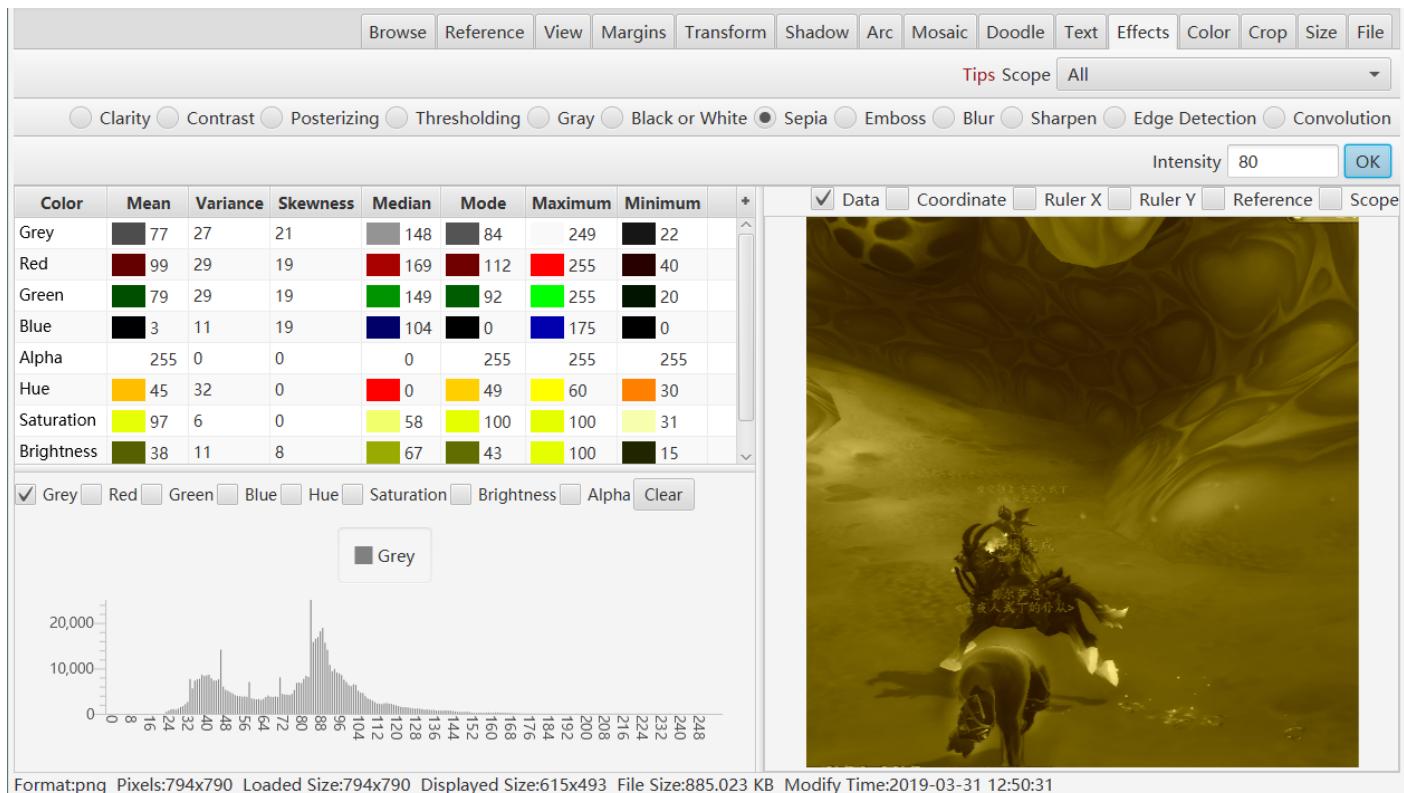
Below is the comparison of handling with dithering and without dithering.



## 6.8.9 Sepia

Input intensity, click button “OK” or press ENTER.

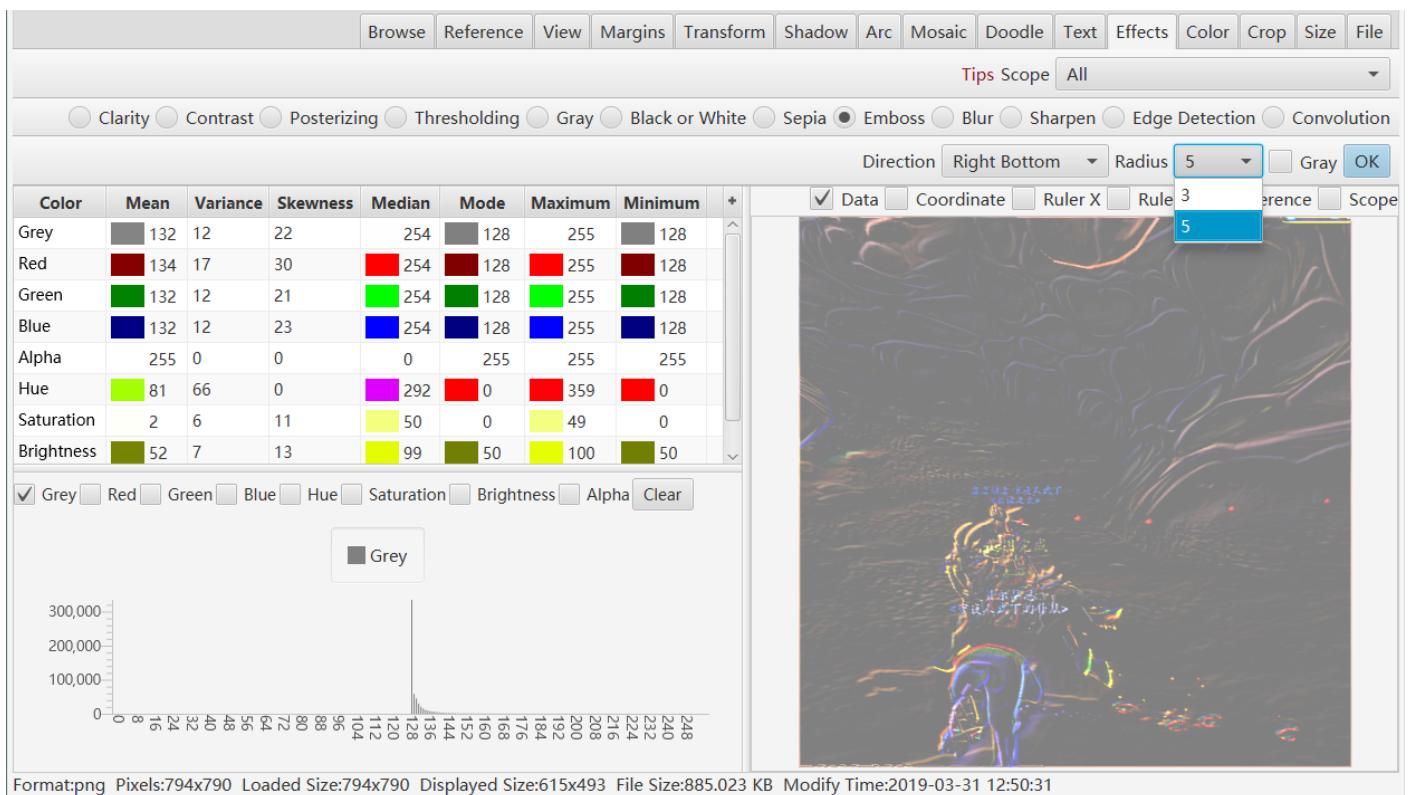
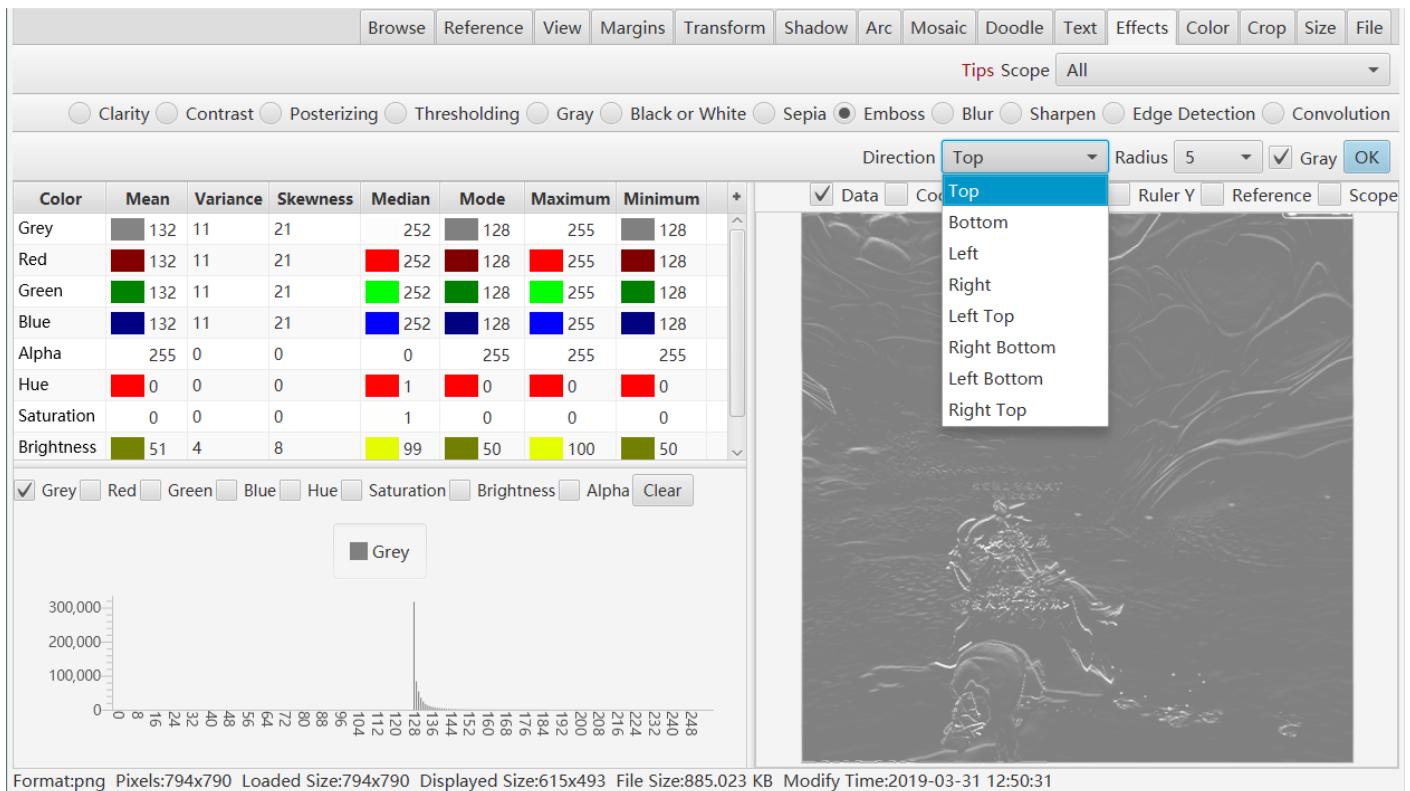
Below is comparison of effects with different intensities.



## 6.8.10 Emboss

Select direction, radius, whether gray, and click button “OK” or press ENTER.

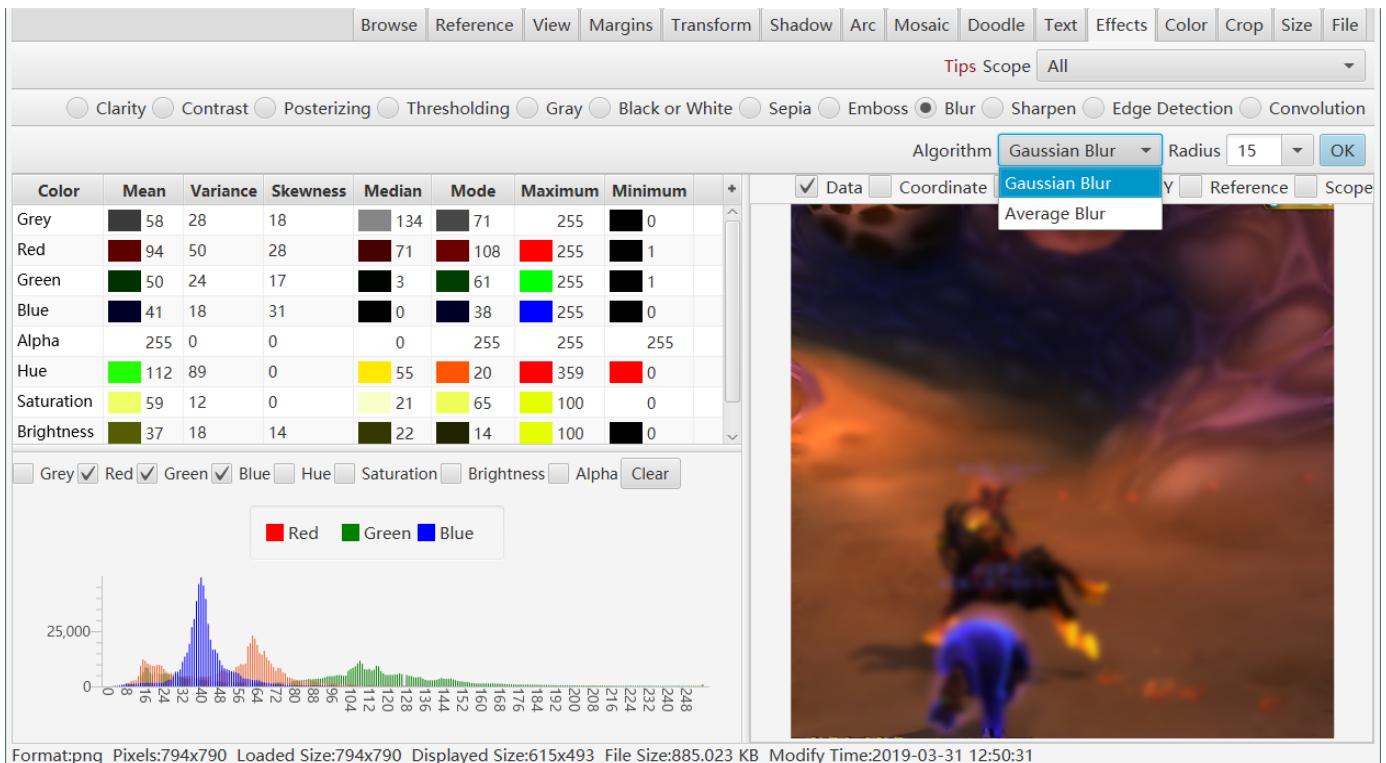
Below is comparison of effects with different parameters.



## 6.8.11 Blur

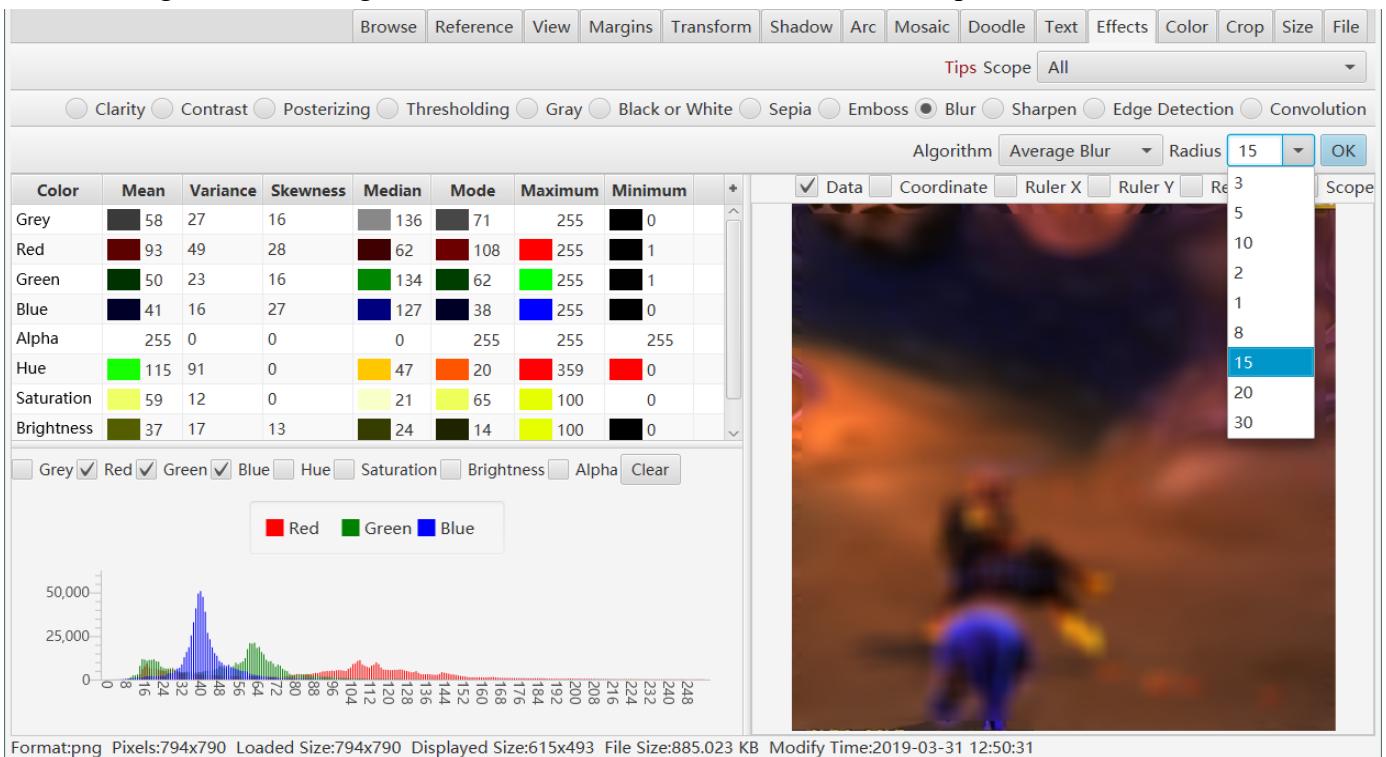
### 6.8.11.1 Gaussian Blur

Select algorithm “Gaussian Blur” and radius, and click button “OK” or press ENTER.



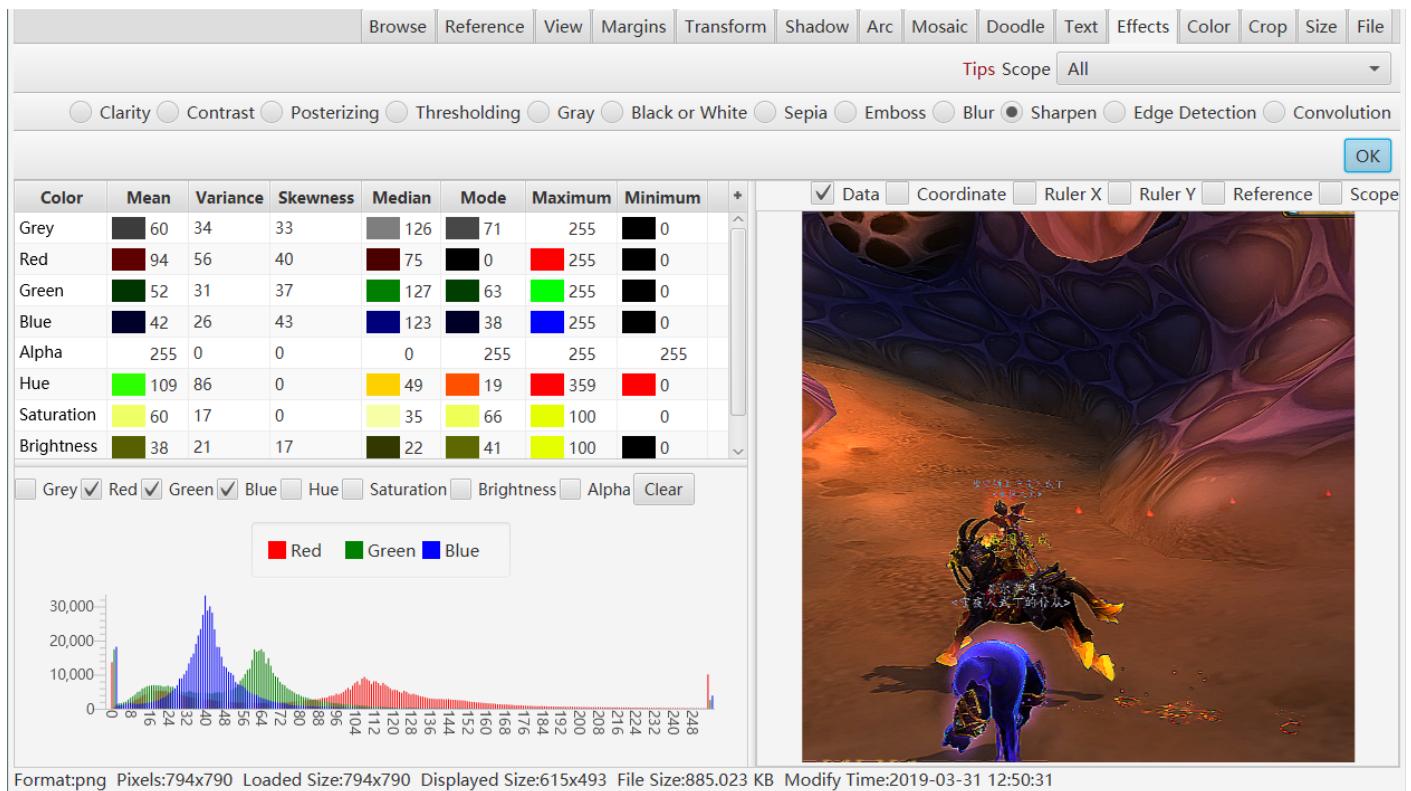
### 6.8.11.2 Average Blur

Select algorithm “Average Blur” and radius, and click button “OK” or press ENTER.



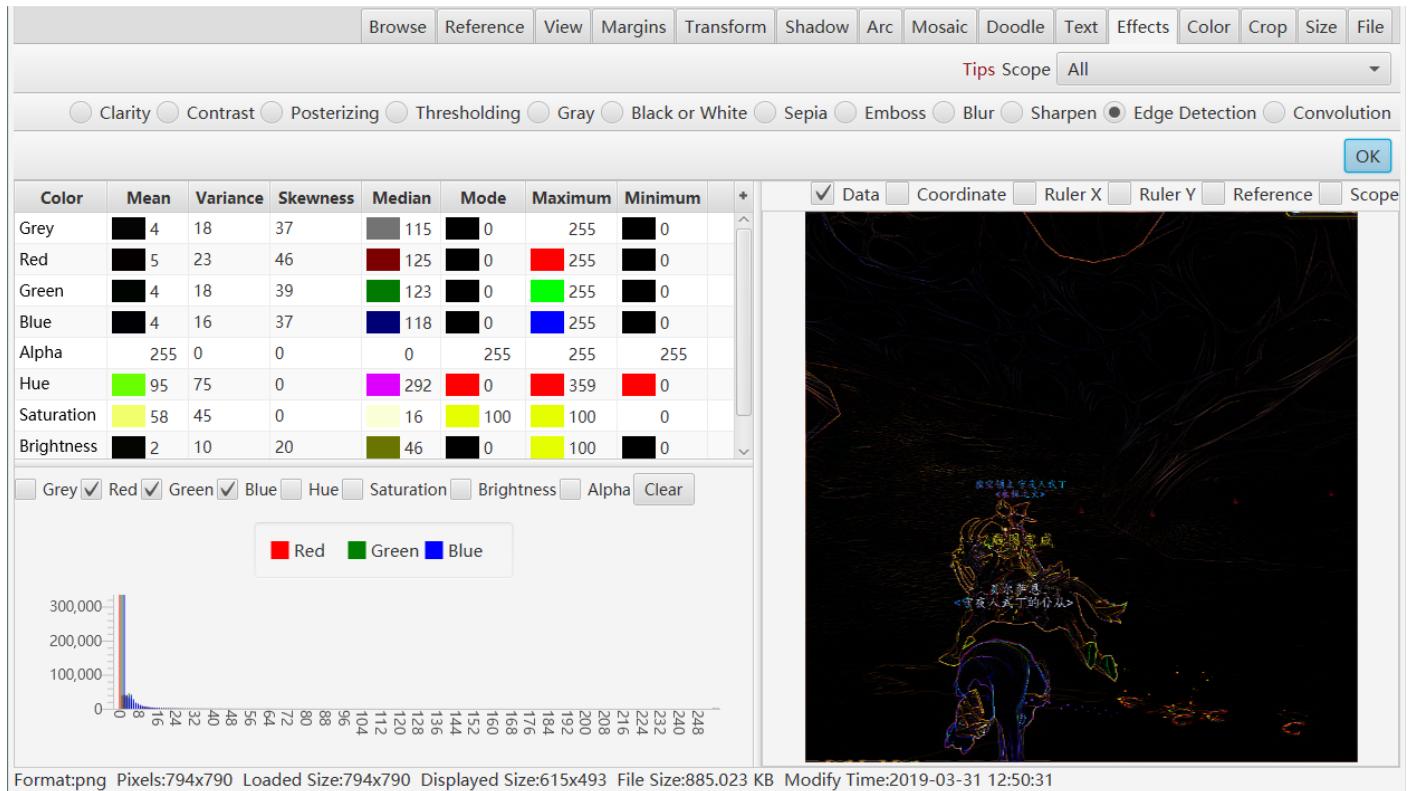
## 6.8.12 Sharpen

Click button “OK” or press ENTER.



## 6.8.13 Edges Detect

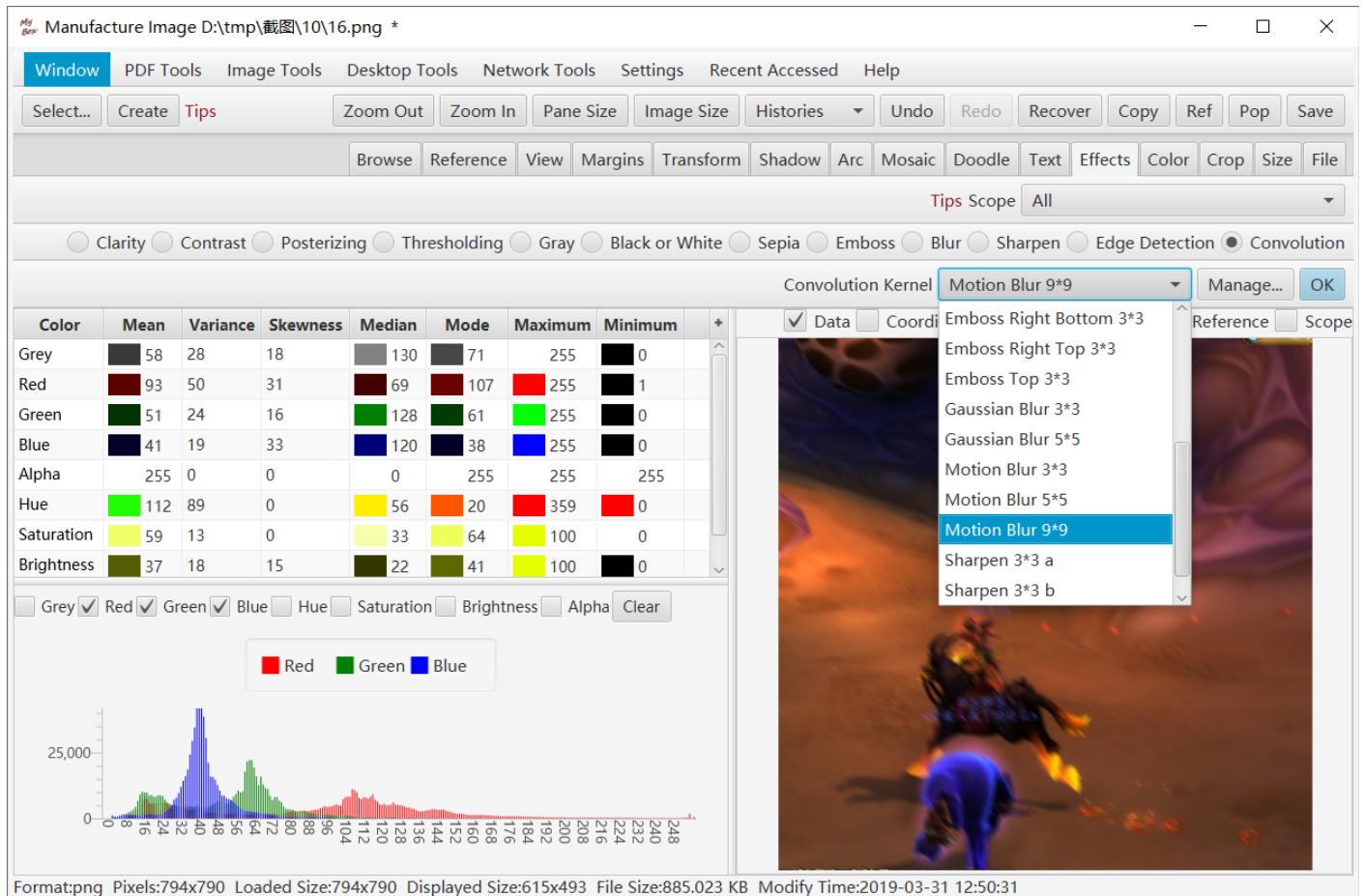
Click button “OK” or press ENTER.



## 6.8.14 Convolution

Select convolution kernel, and click button “OK” or press ENTER.

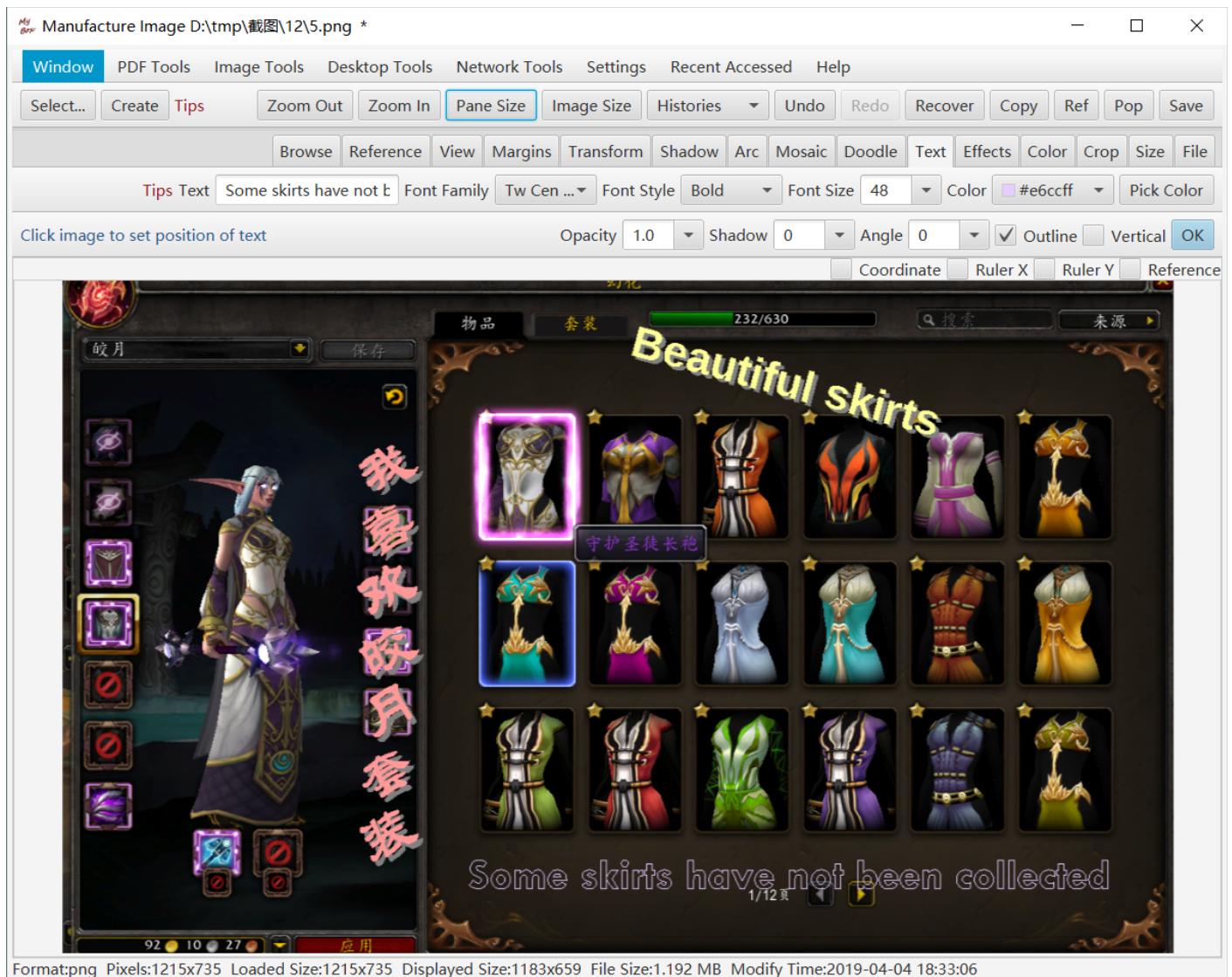
Click button “Manage...” to add/delete/edit convolution kernels.



## 6.9 Text

1. Click image to locate the text. Press ENTER to confirm drawing the text on image.
2. Options: Font family, style, size, color, opacity, shadow, angle, whether outline, whether vertical.

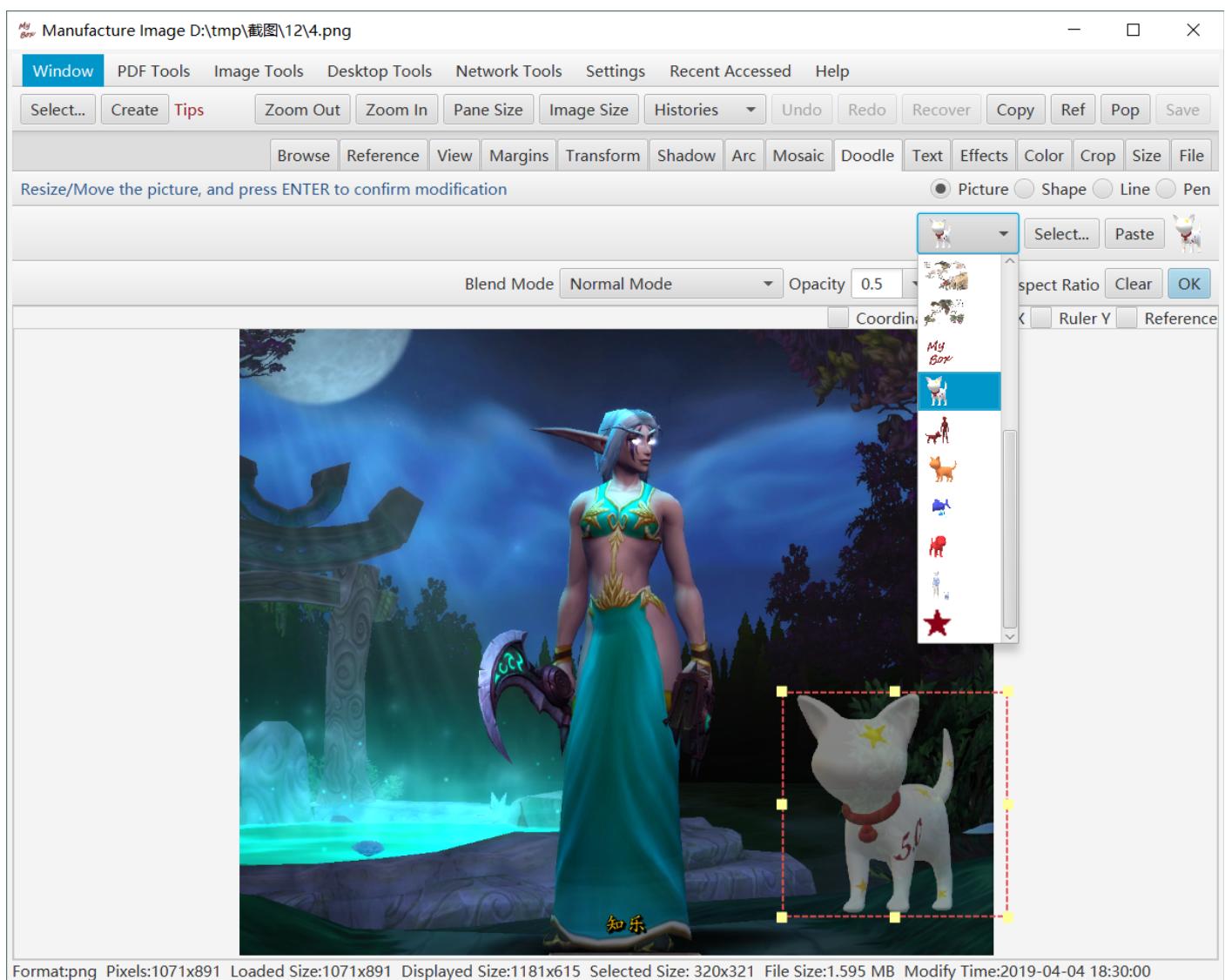
Too small text may be hard to see in big image. Well, you can use tiny and transparent watermark to hide your signature ;)



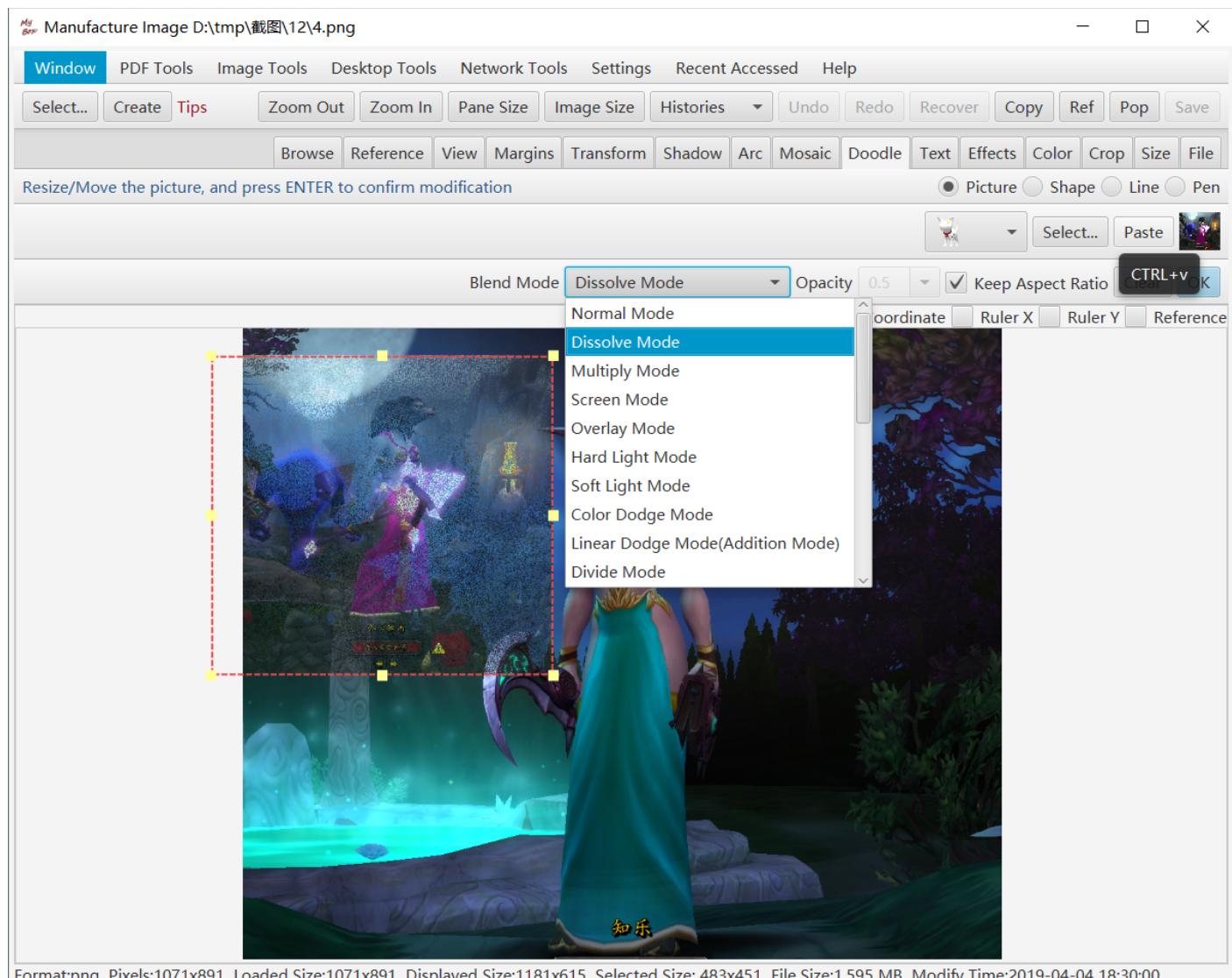
## 6.10 Doodle

### 6.10.1 Paste Picture

1. Select embedded pictures or outside pictures. Click button “Paste” or press “CTRL+v” to get image in system clipboard.
2. Select blend mode. When “Normal Mode” is selected, opacity can be set.
3. Select Whether keep aspect ratio.
4. Drag anchors in dotted rectangle line to adjust the size and location of the pasted picture. Or double left click to set left-top corner and double right click to set right-bottom corner.
5. Click button “OK” or press ENTER to confirm pasting the picture onto image.
6. Click button “Clear” to remove the picture which has not been confirmed to be pasted.

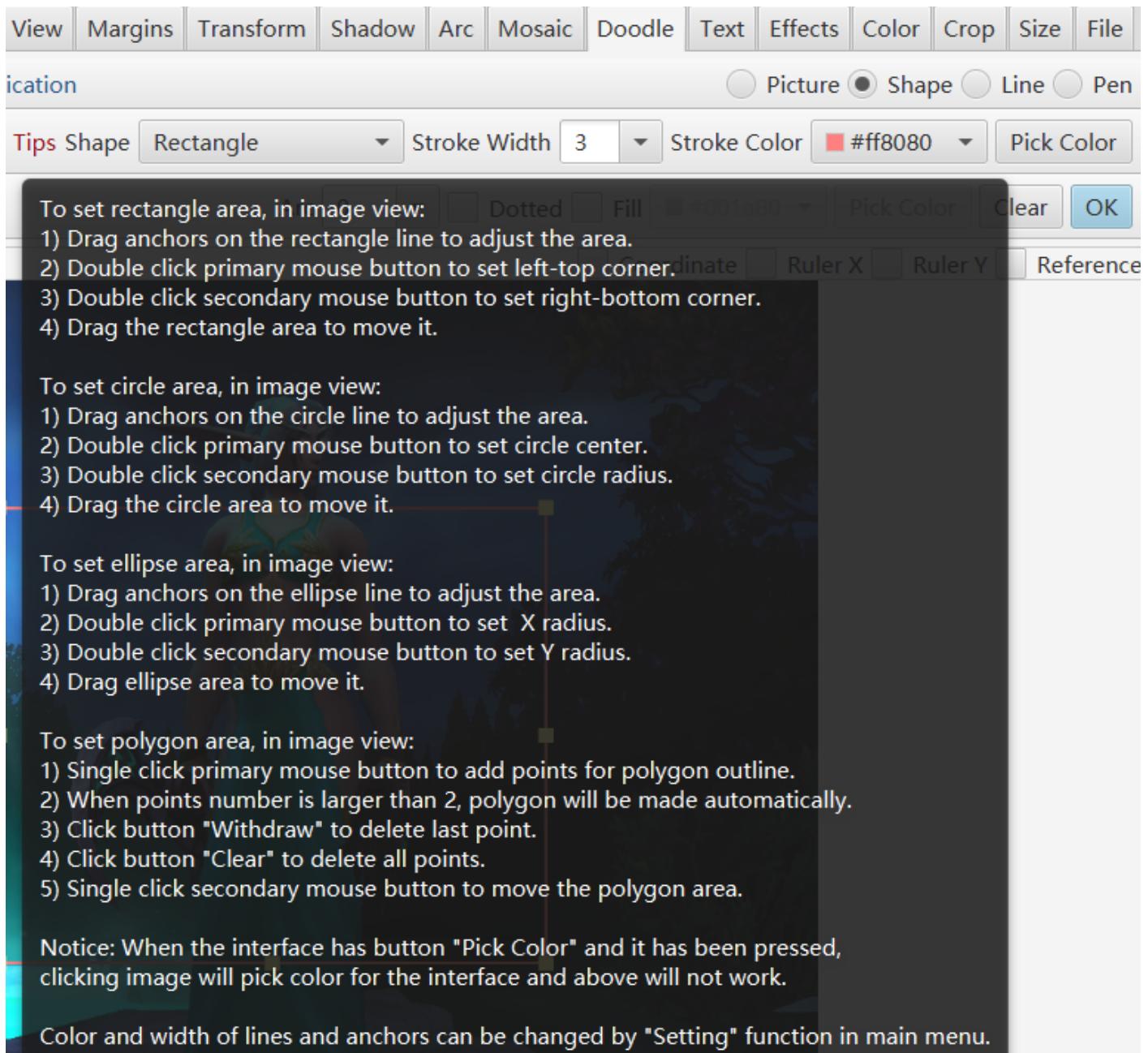


# MyBox User Guide – Image Tools v5.0



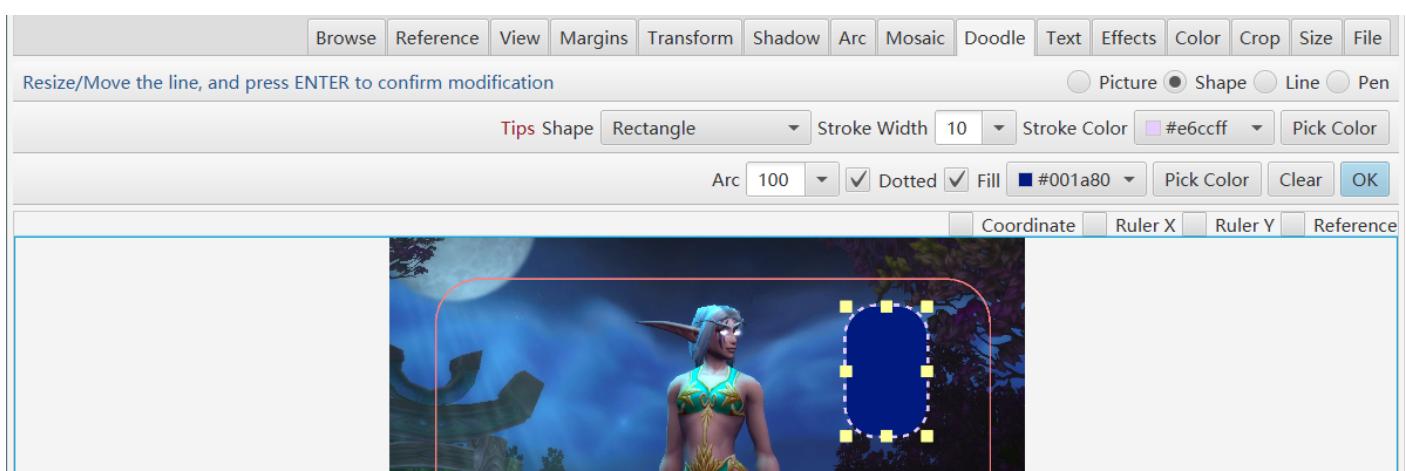
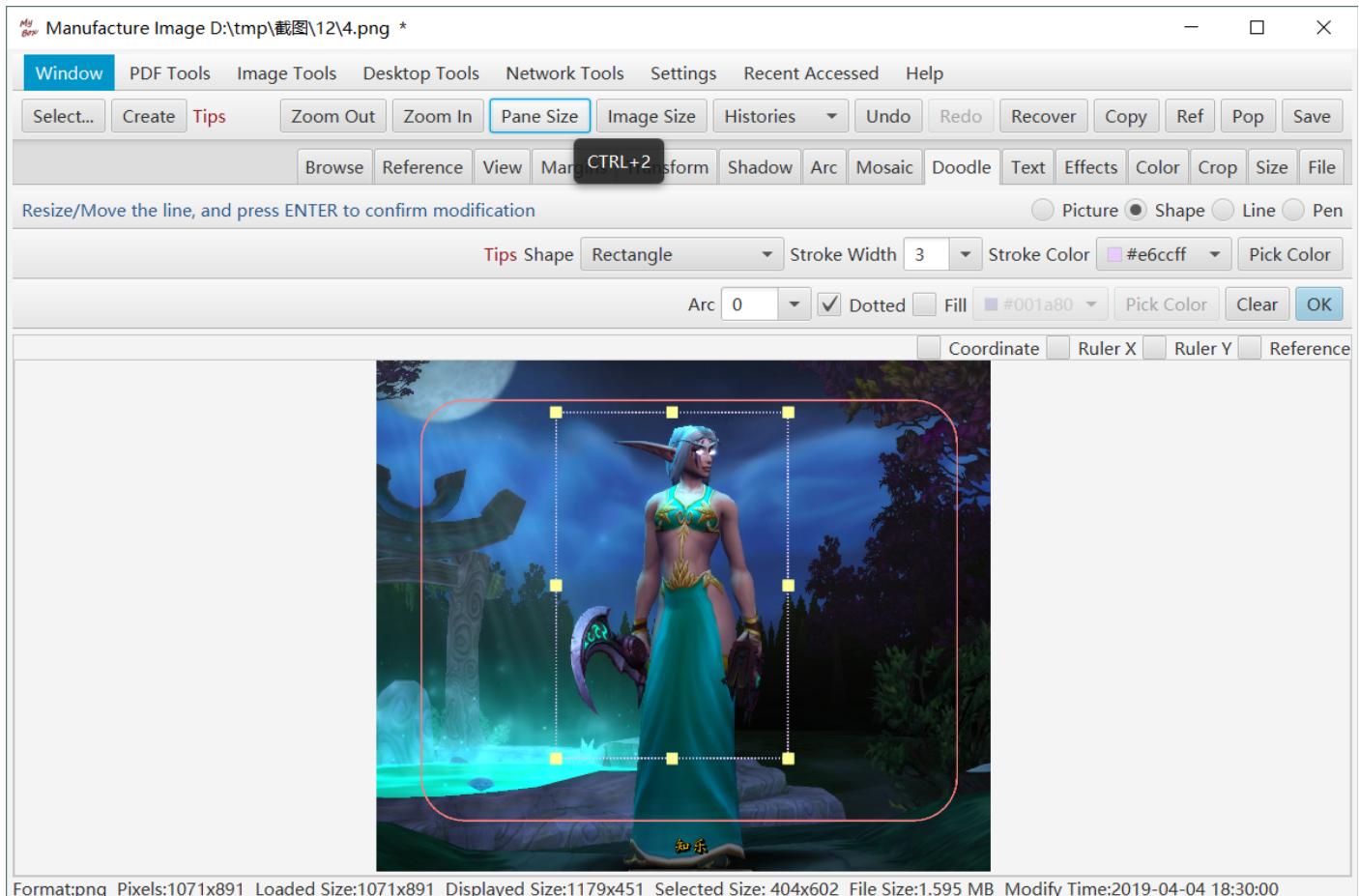
## 6.10.2 Draw Shape

Move mouse upon the red label “Tips” beside shape selector, and information will be popped:



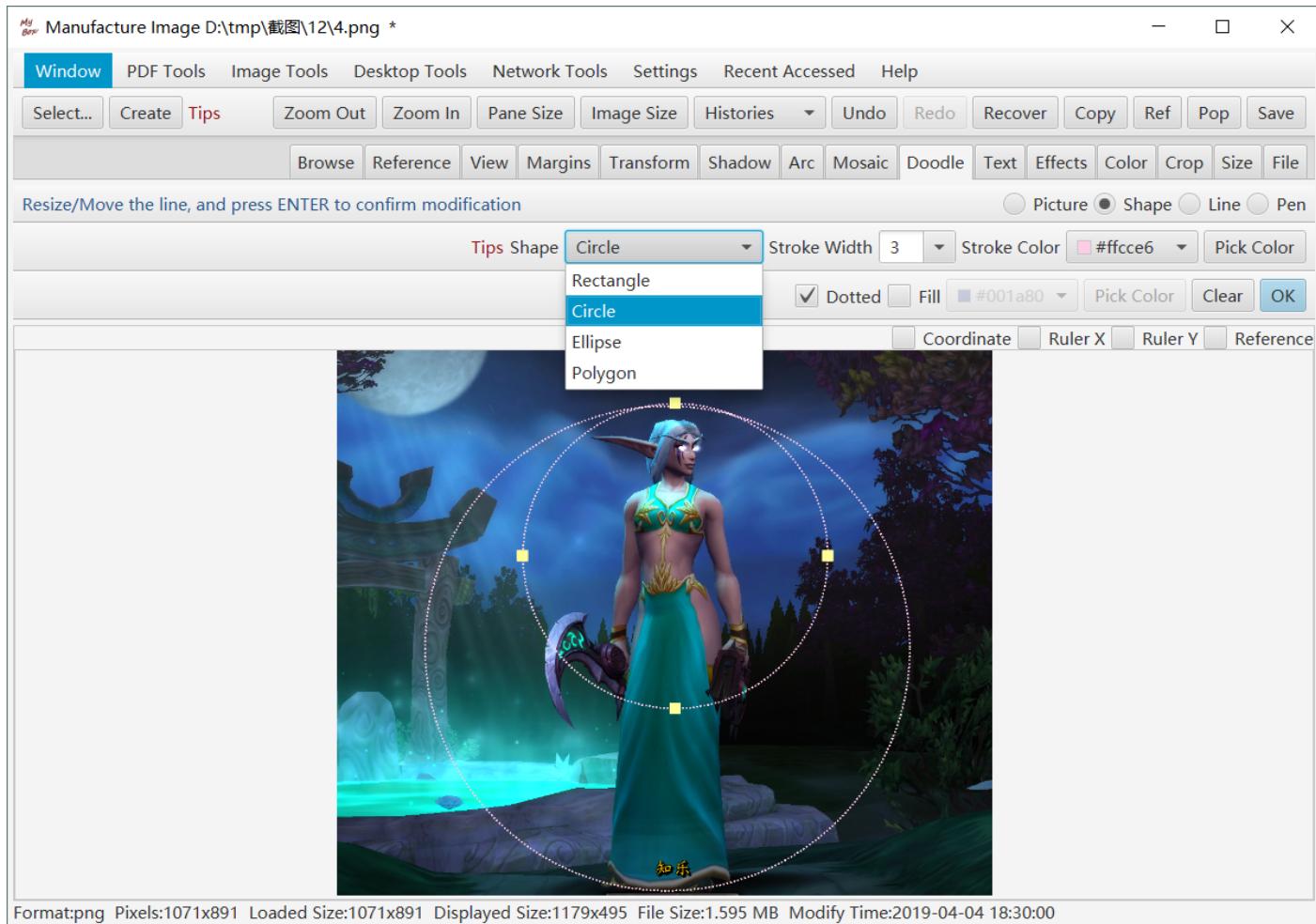
### 6.10.2.1 Draw/Fill Rectangle

1. Drag anchors in rectangle line to adjust its size and location. Or double left click to set left-top corner and right double click to set right-bottom corner.
2. Set stroke width and color. When width is zero, the shape line is not drawn.
3. Press button “Pick Color” to get color by clicking image.
4. Set arc of rectangle, select whether line is dotted, and check whether fill color.
5. Click button “OK” or press ENTER, to confirm drawing rectangle line or fill it onto image.
6. Click button “Clear” to remove the shape which has not been confirmed to be drawn.



### 6.10.2.2 Draw/Fill Circle

1. Drag anchors in circle line to adjust its size and location. Or double left click to set circle center and right double click to set circle radius.
2. Set stroke width and color. When width is zero, the shape line is not drawn.
3. Press button “Pick Color” to get color by clicking image.
4. Select whether line is dotted, and check whether fill color.
5. Click button “OK” or press ENTER, to confirm drawing circle line or fill it onto image.
6. Click button “Clear” to remove the shape which has not been confirmed to be drawn.

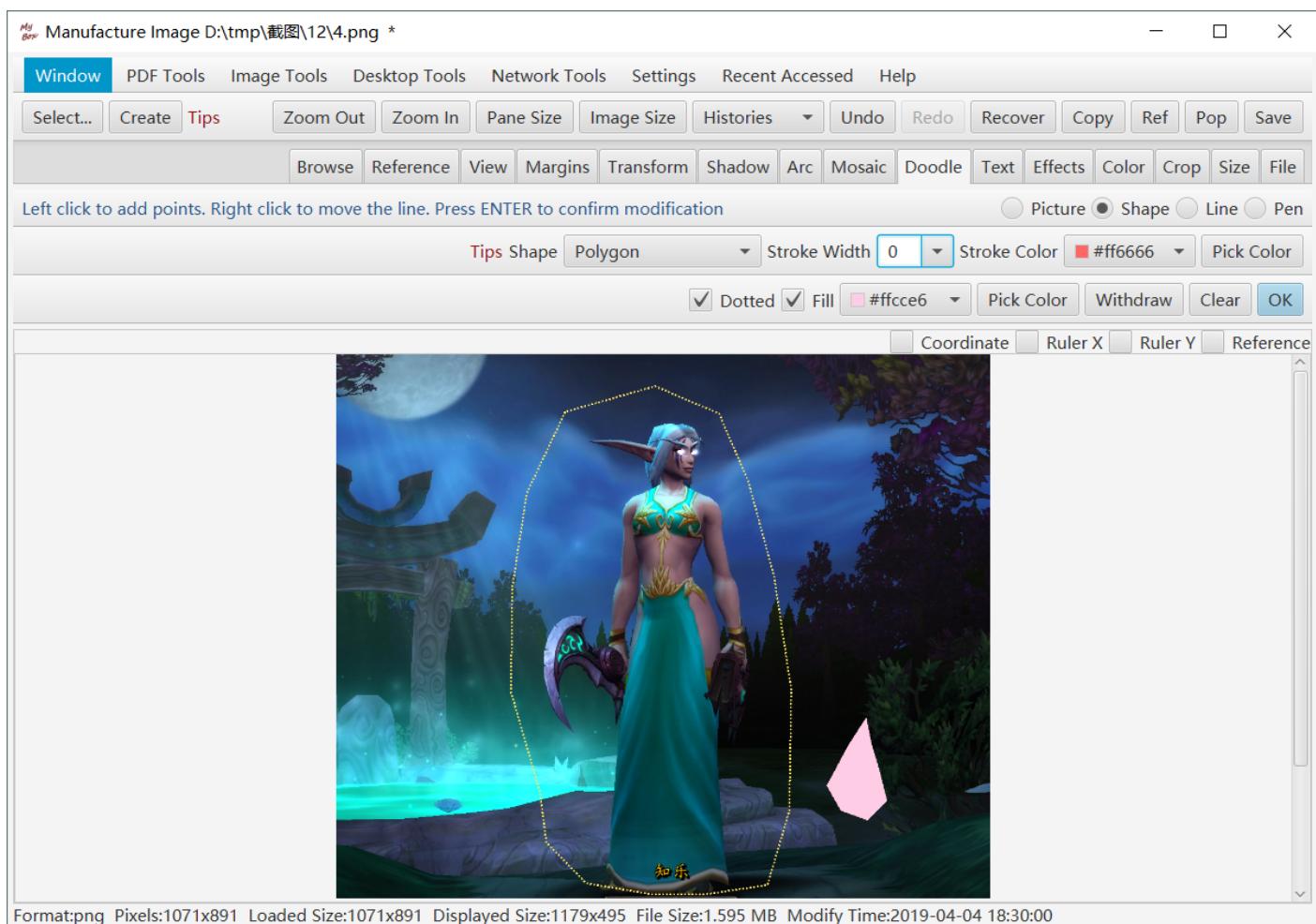
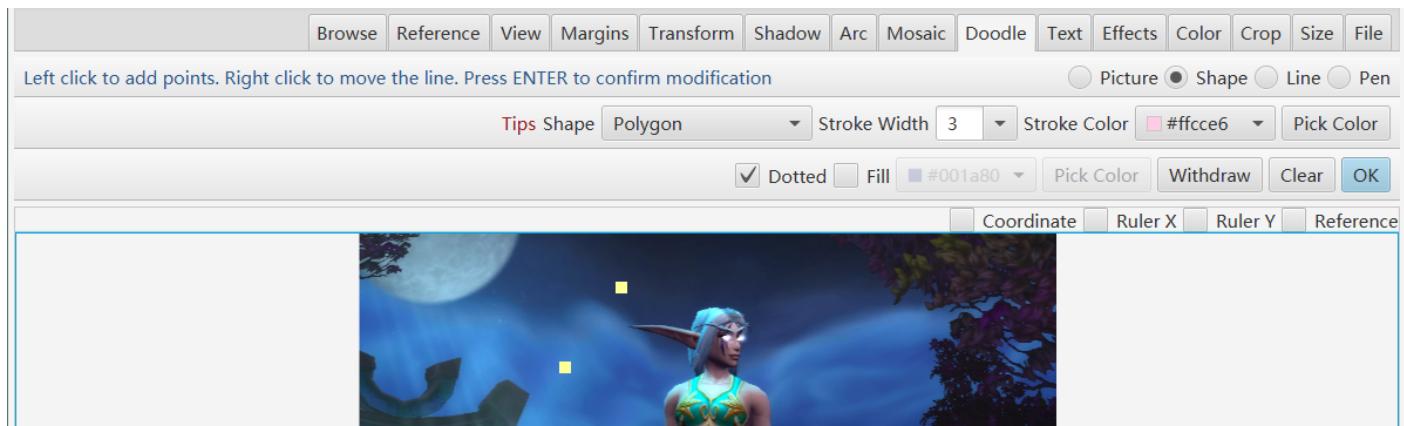


### 6.10.2.3 Draw/Fill Ellipse

Similar to circle, except: Double left click to set X radius and double right click to set Y radius.

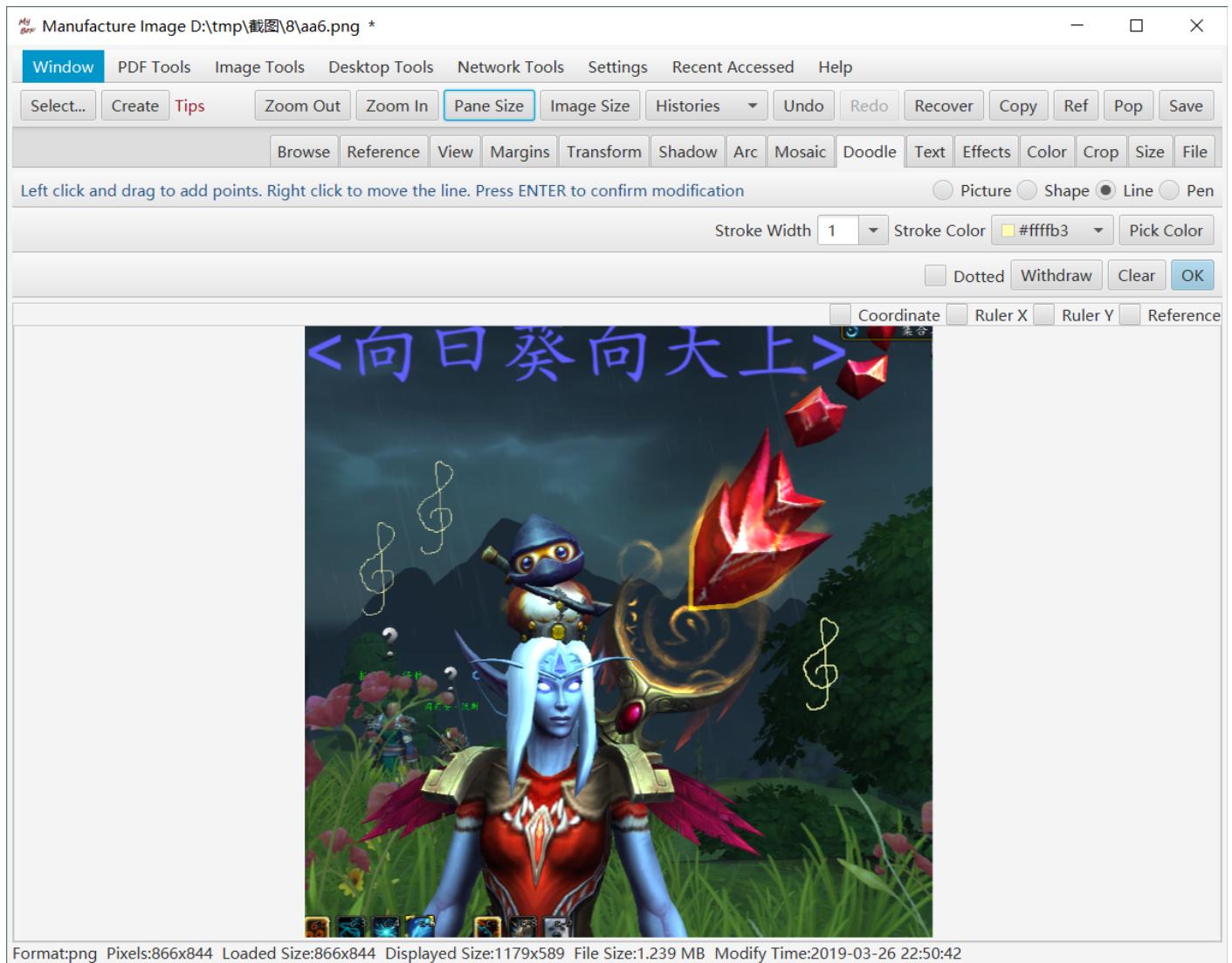
### 6.10.2.4 Draw/Fill Polygon

1. Left click image to add vertexes. When vertexes number is more than 2, the polygon is generated and shown. Right click to move the polygon.
2. Set stroke width and color. When width is zero, the shape line is not drawn.
3. Press button “Pick Color” to get color by clicking image.
4. Select whether line is dotted, and check whether fill color.
5. Click button “OK” or press ENTER, to confirm drawing polygon line or fill it onto image.
6. Click button “Clear” to remove the shape which has not been confirmed to be drawn.



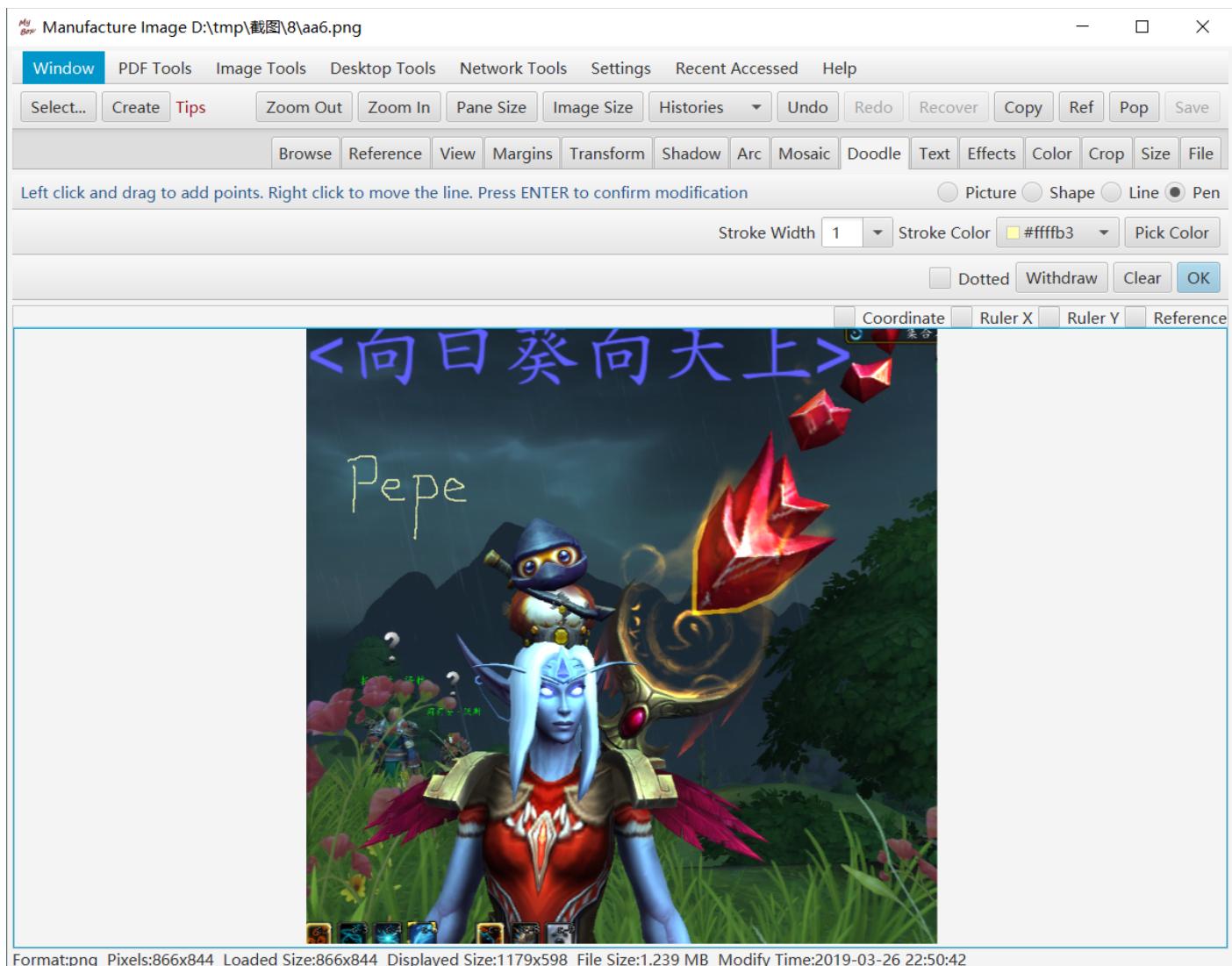
### 6.10.3 Line

1. Press left mouse and drag mouse to draw the line. All points will be connected in the order of adding, and multiple drawing makes one line. Right click to move the line.
2. Set stroke width and color. Press button “Pick Color” to get color by clicking image.
3. Select whether line is dotted.
4. Click button “OK” or press ENTER, to confirm drawing the line onto image.
5. Click button “Withdraw” to remove the last added point which has not been confirmed to add.
6. Click button “Clear” to remove all points which have not been confirmed to add.



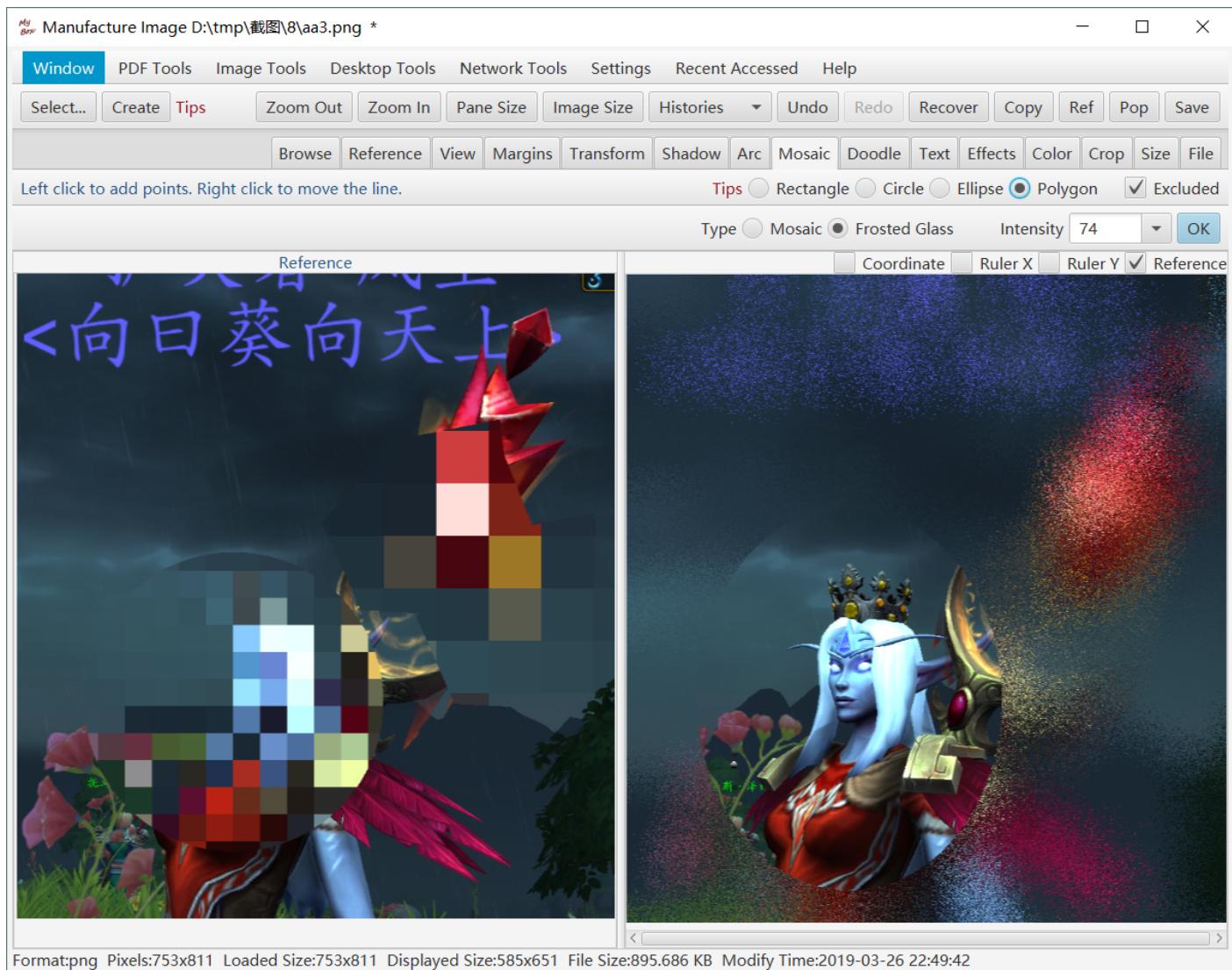
## 6.10.4 Pen

1. Press left mouse and drag mouse to draw the lines. When mouse is released, a new line is started. Multiple drawing create multiple lines. Right click to move the lines.
2. Set stroke width and color. Press button “Pick Color” to get color by clicking image.
3. Select whether line is dotted.
4. Click button “OK” or press ENTER, to confirm drawing the lines onto image.
5. Click button “Withdraw” to remove the last line which has not been confirmed to add .
6. Click button “Clear” to remove all lines which have not been confirmed to add.



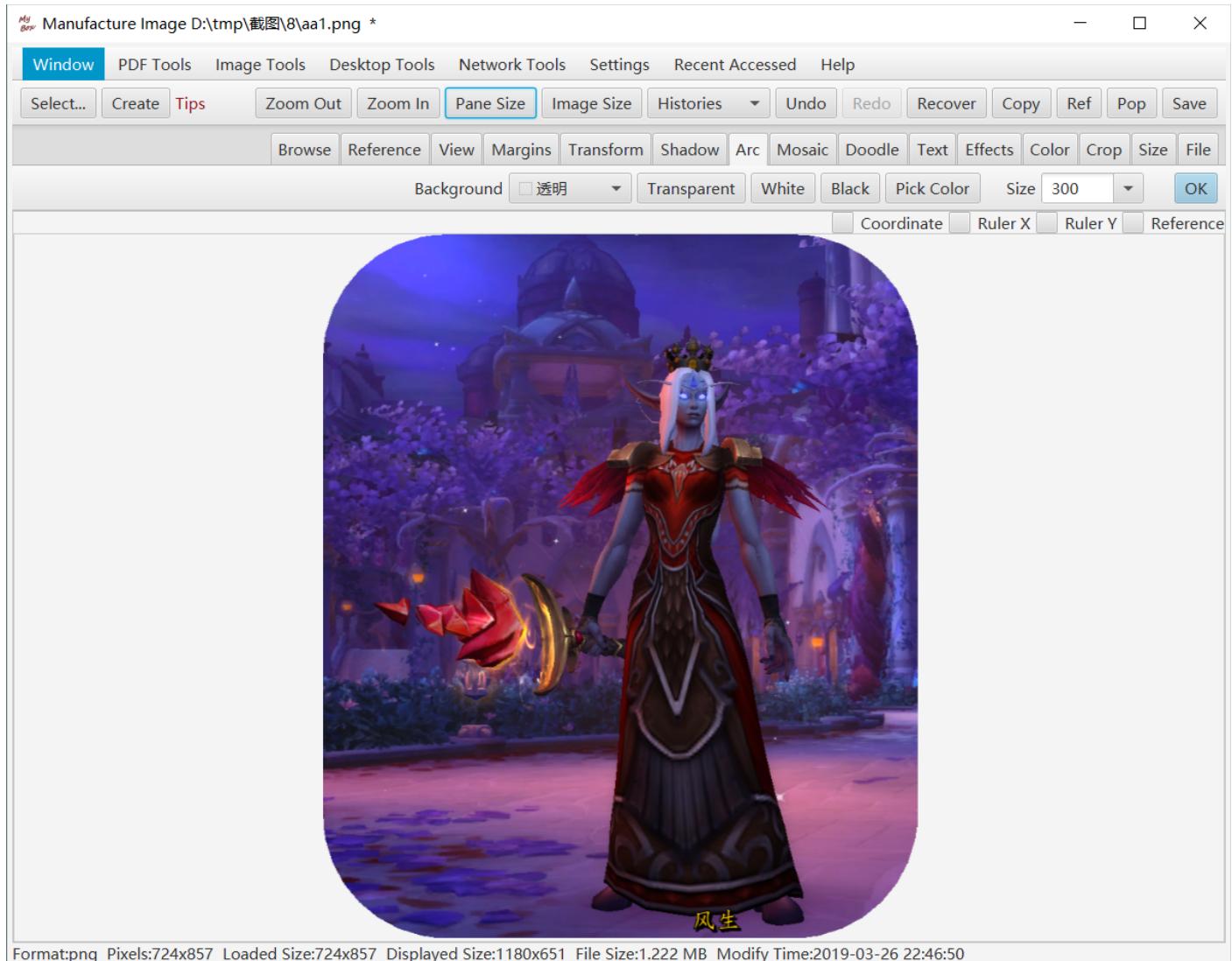
## 6.11 Mosaic

1. Select area inside or outside rectangle/circle/ellipse/polygon. Move mouse upon red label “Tips” beside shape selector to get information about how to select area. Refer to previous sections.
2. Select type of mosaic or frosted glass.
3. Select intensity.
4. Click button “OK” or press ENTER to confirm the modification.



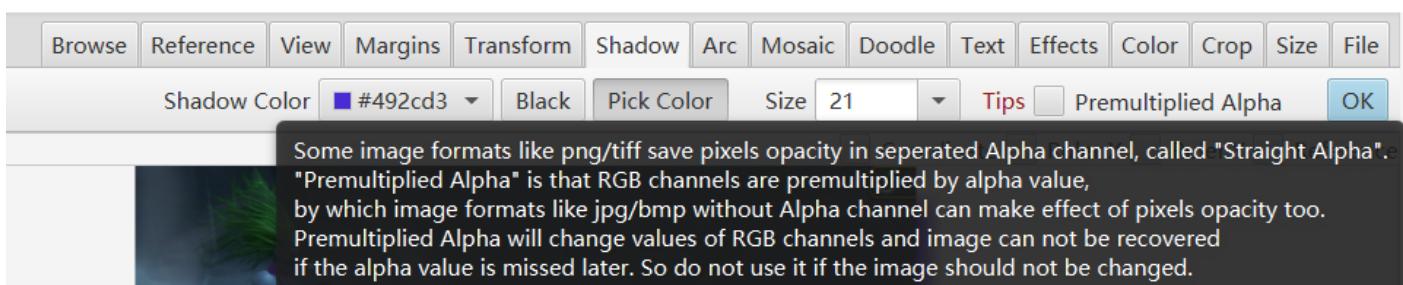
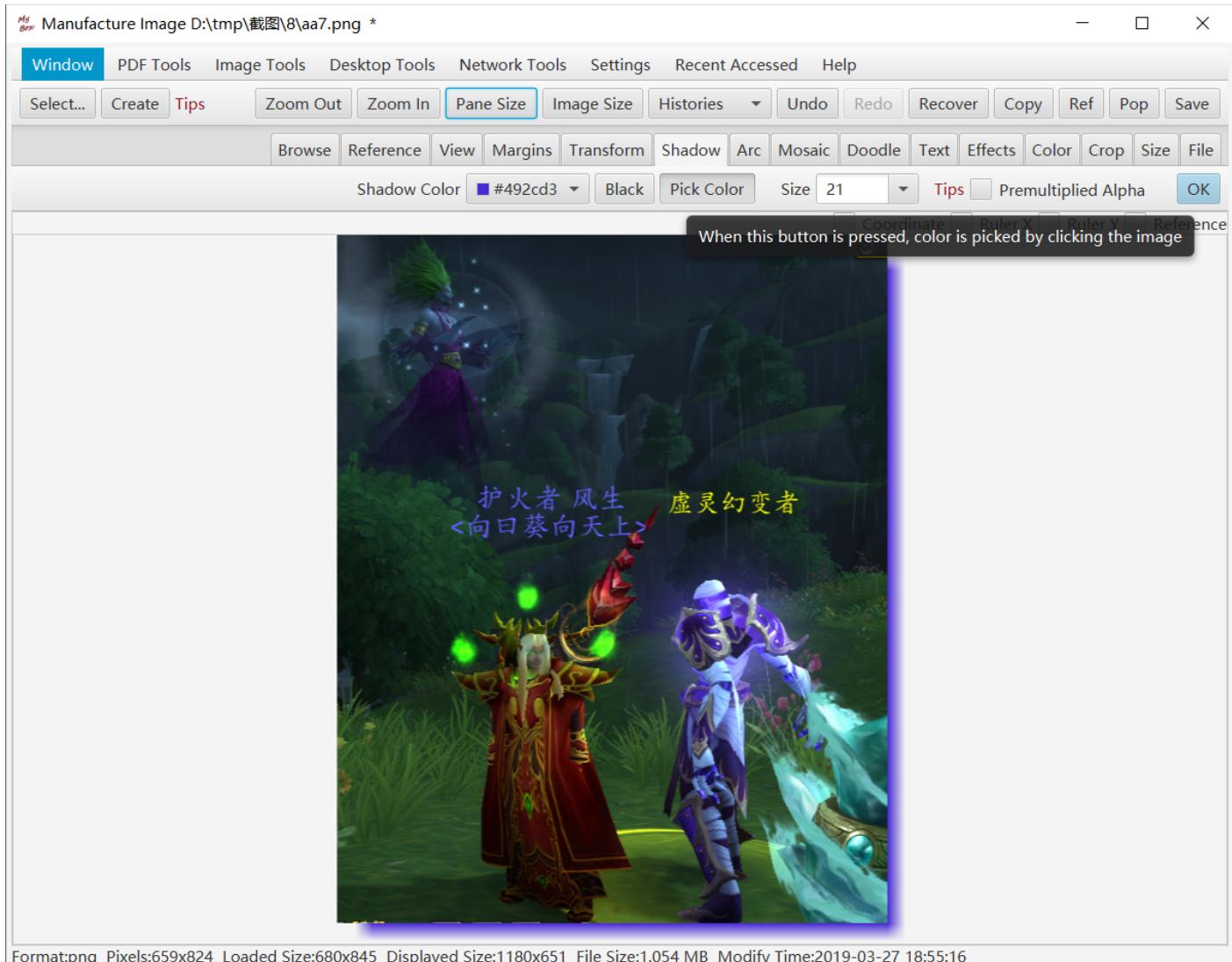
## 6.12 Arc

1. Set size and background color.
2. Press button “Pick Color” to get color by clicking image.



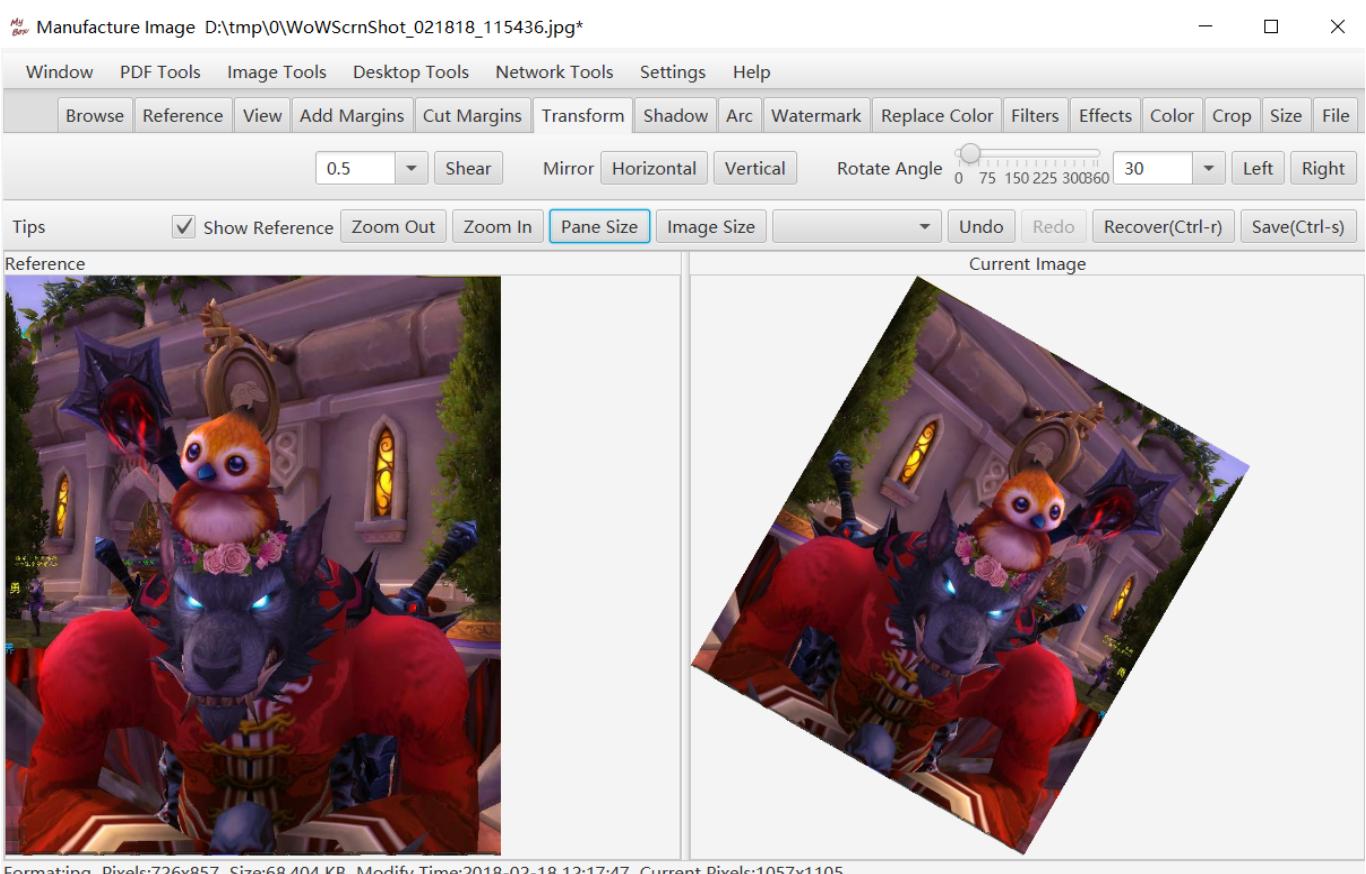
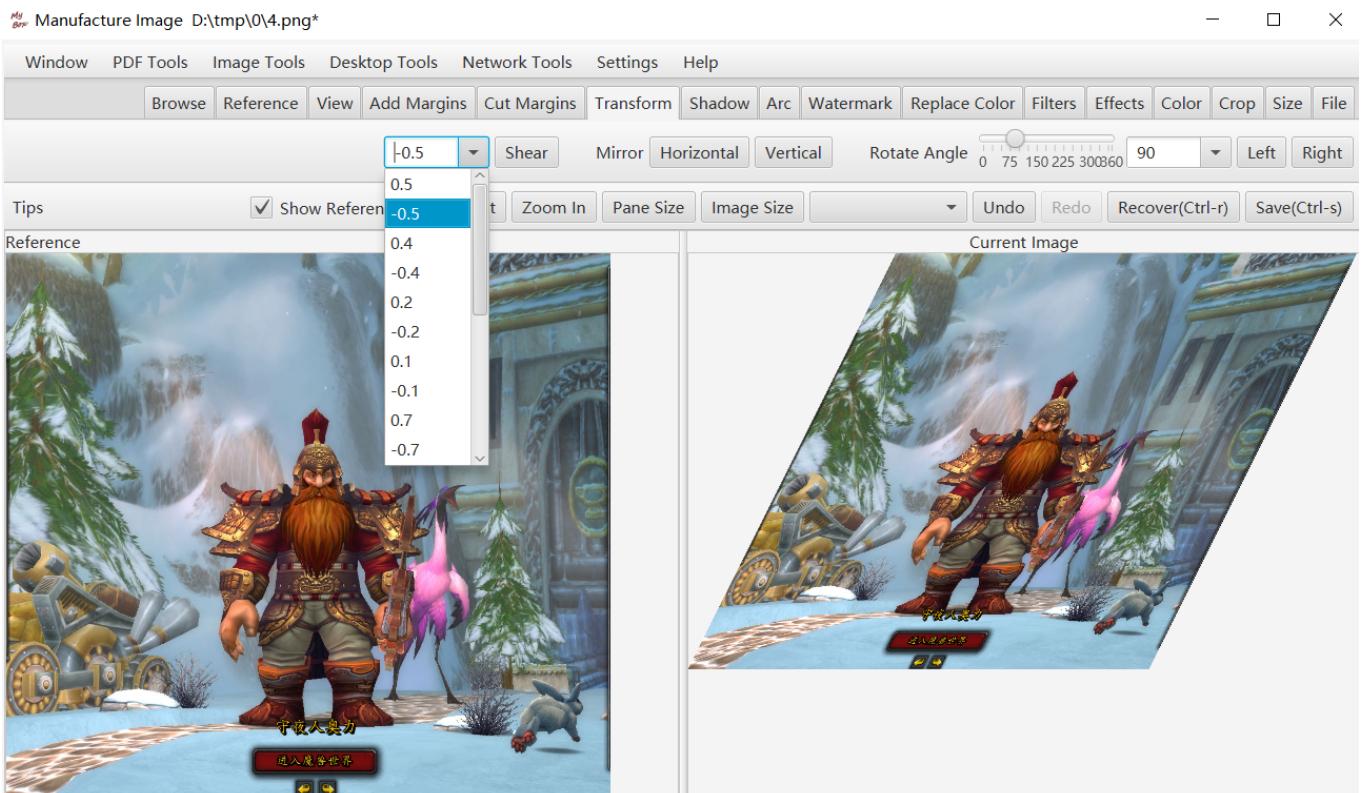
## 6.13 Shadow

1. Set size and background color.
2. Press button “Pick Color” to get color by clicking image.
3. Premultiplied Alpha will be applied for formats which do not support Alpha.



## 6.14 Transform

- 1) Scale of shearing can be positive and negative.
- 2) Angle of rotation can be set.
- 3) Mirror horizontally or vertically.



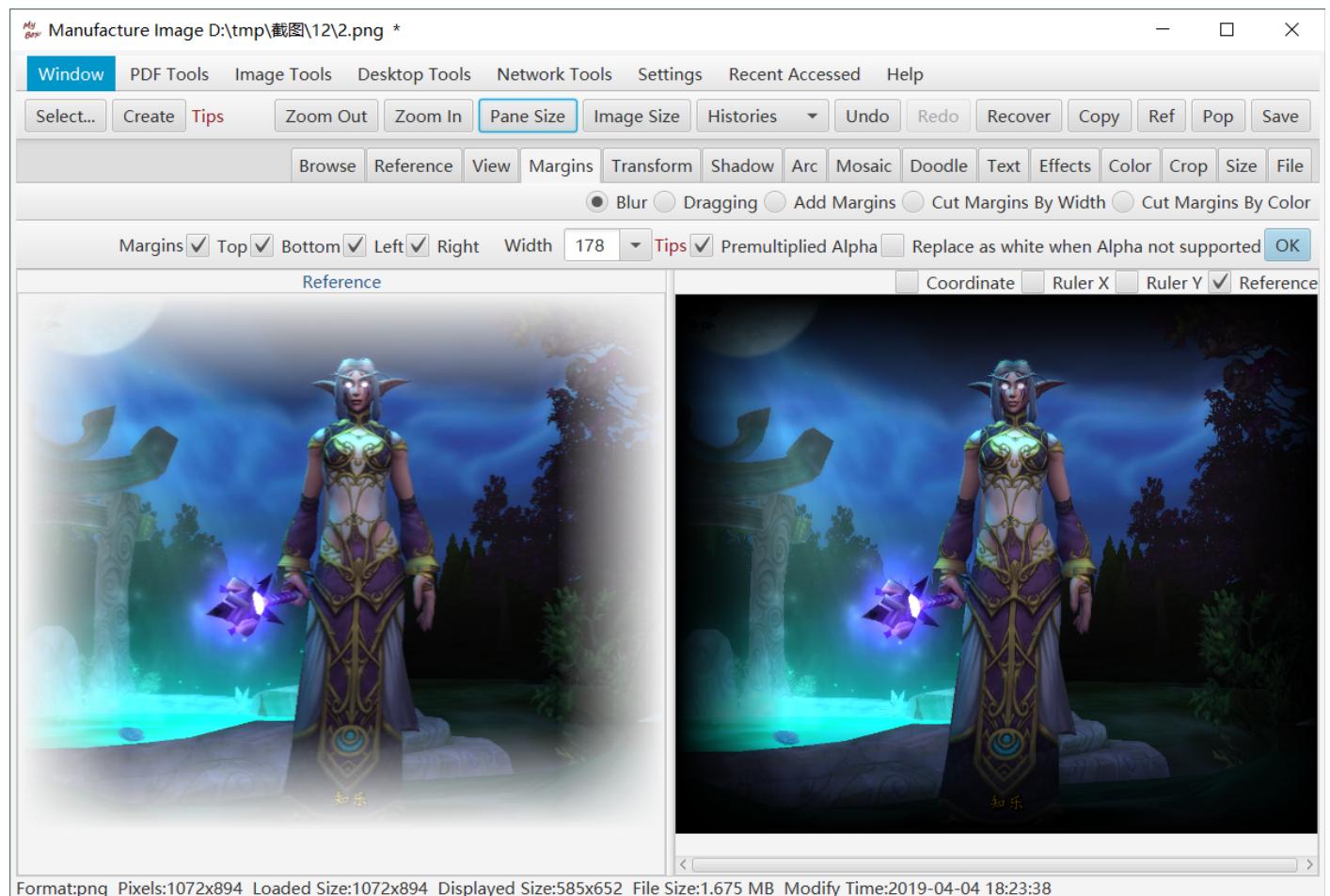
Format:jpg Pixels:726x857 Size:68.404 KB Modify Time:2018-02-18 12:17:47 Current Pixels:1057x1105

## 6.15 Margins

### 6.15.1 Blur Margins

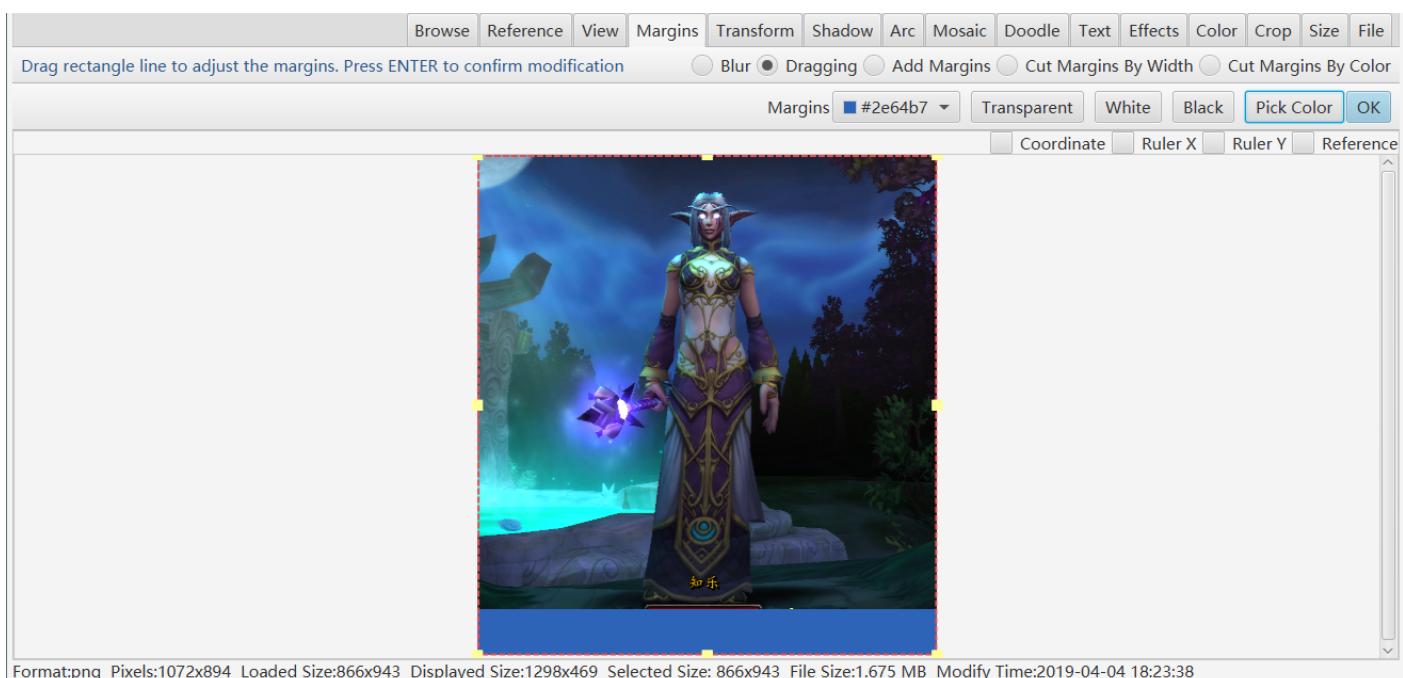
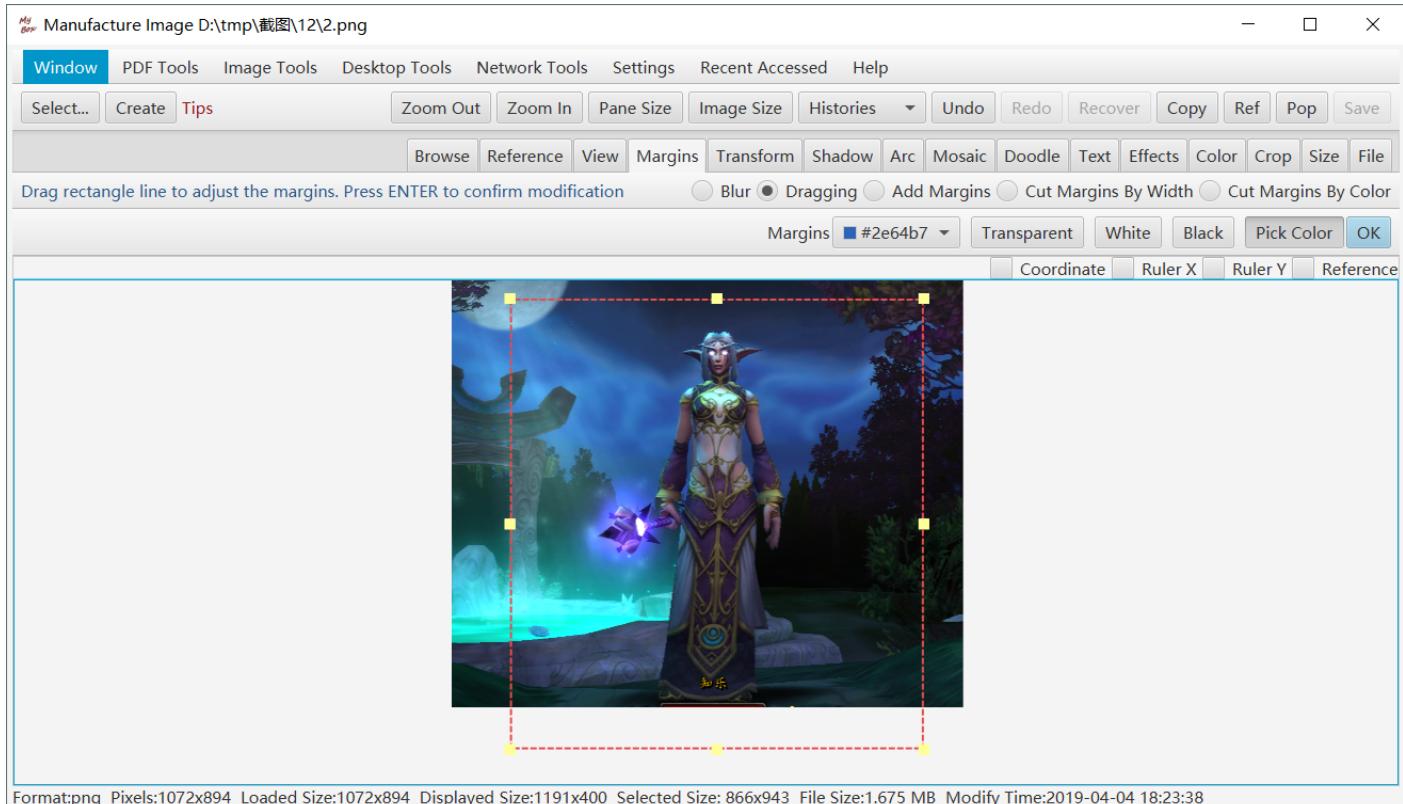
Set margins, width, whether Premultiplied Alpha, whether replace alpha as white.

Below is comparison of effects with “replace alpha as white” and with “replace alpha as black”(Default).



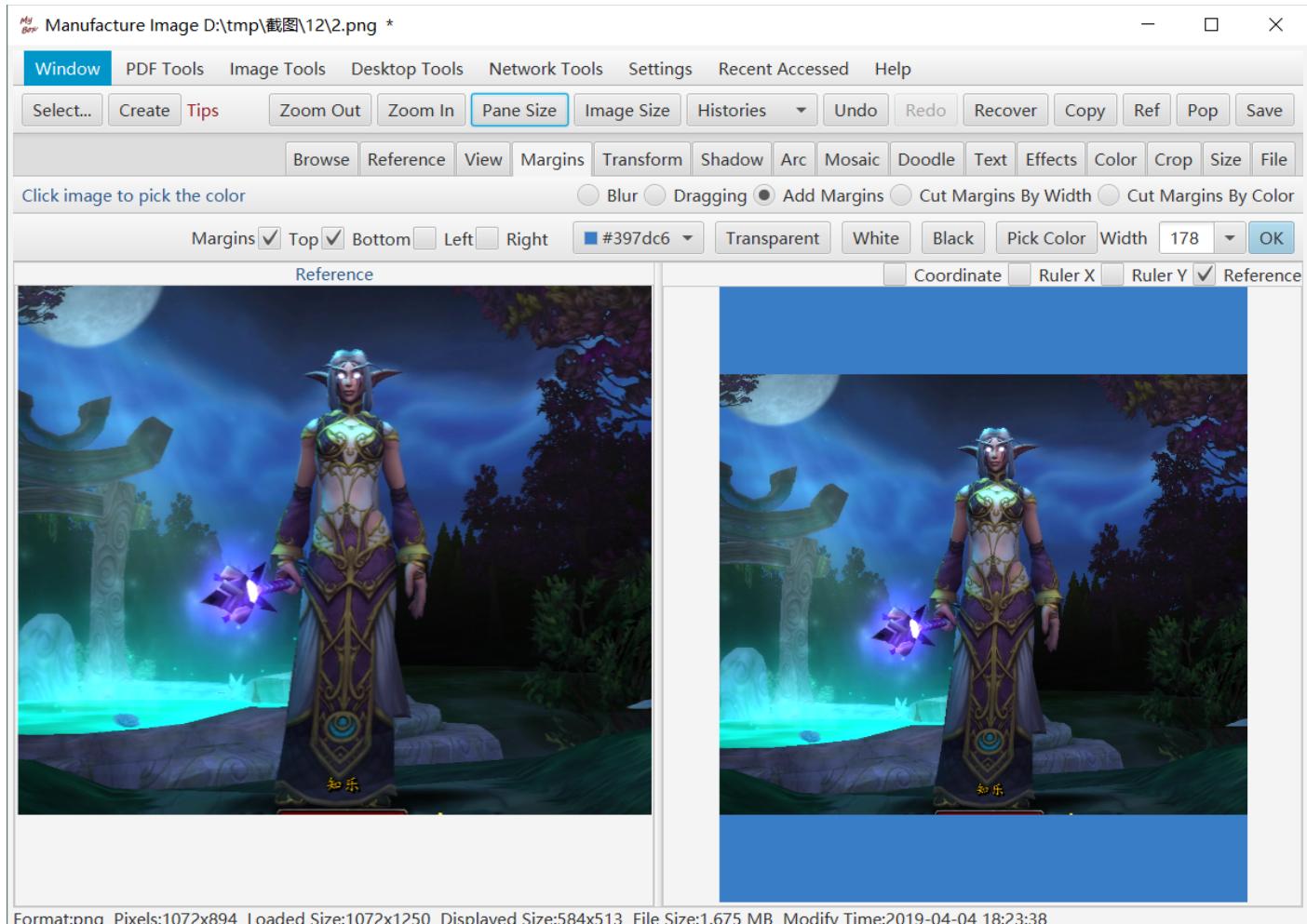
## 6.15.2 Drag Margins

1. Drag anchors in dotted rectangle line to adjust the margins. Either add margins, or cut margins.
2. Click button “Pick Color” to get color by clicking image which is used to fill the added margins.
3. Click button “OK” or press ENTER to apply the modification.



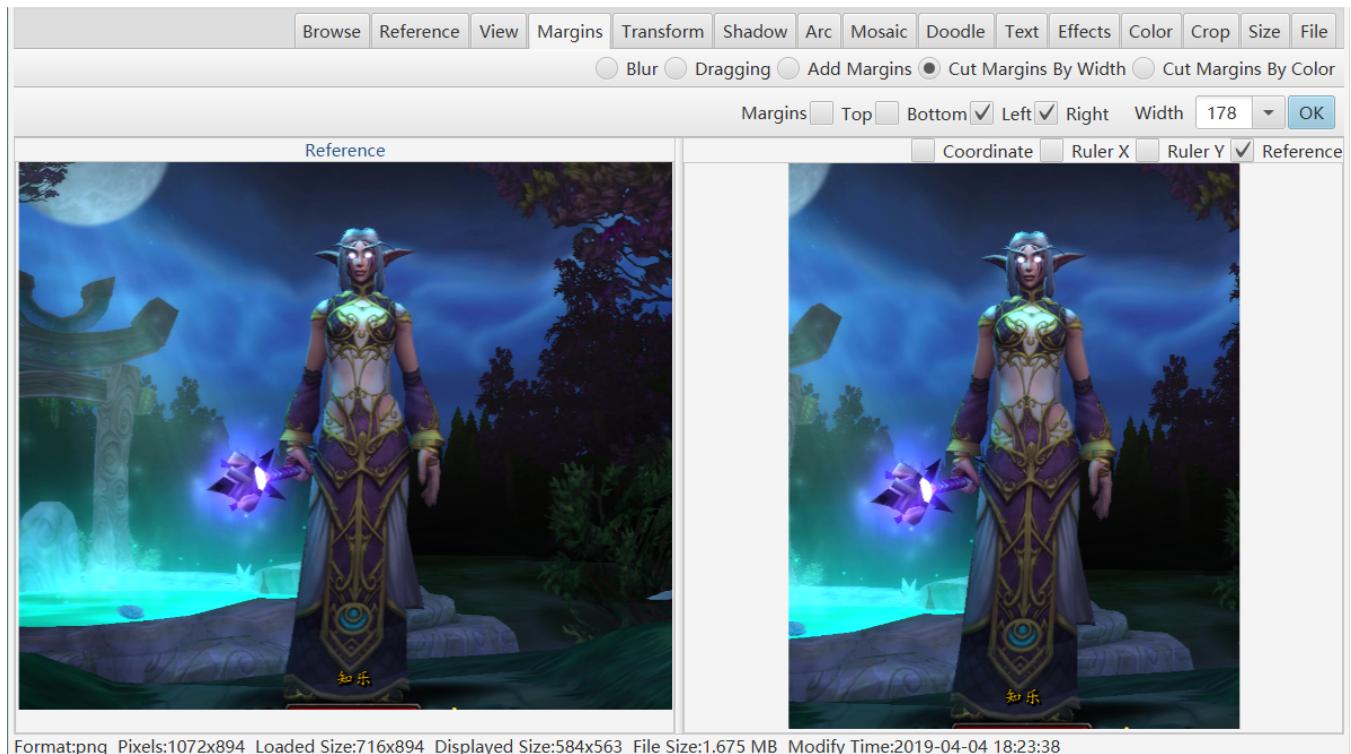
### 6.15.3 Add Margins

1. Select margins and width.
2. Click button “Pick Color” to get color by clicking image which is used to fill the added margins.
3. Click button “OK” or press ENTER to add the margins.



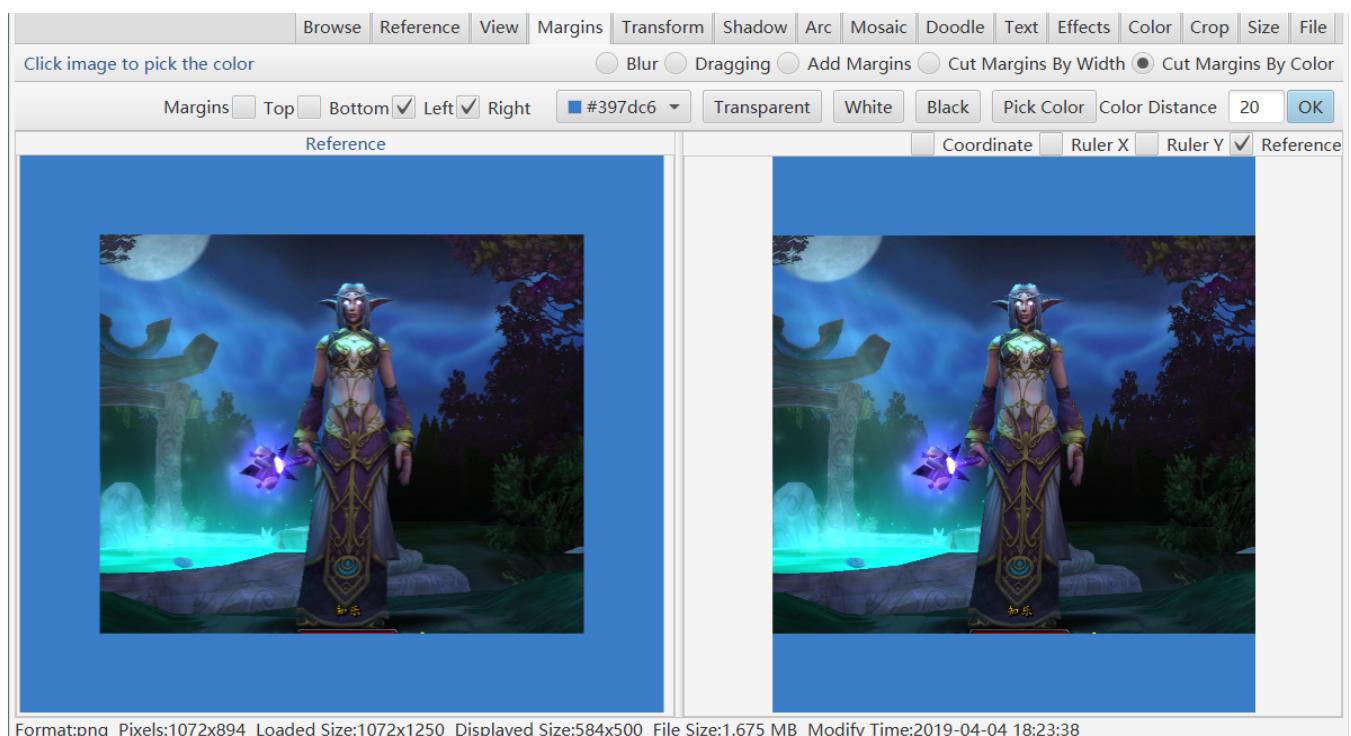
## 6.15.4 Cut Margins By Width

1. Select margins and width.
2. Click button “OK” or press ENTER to cut the margins.



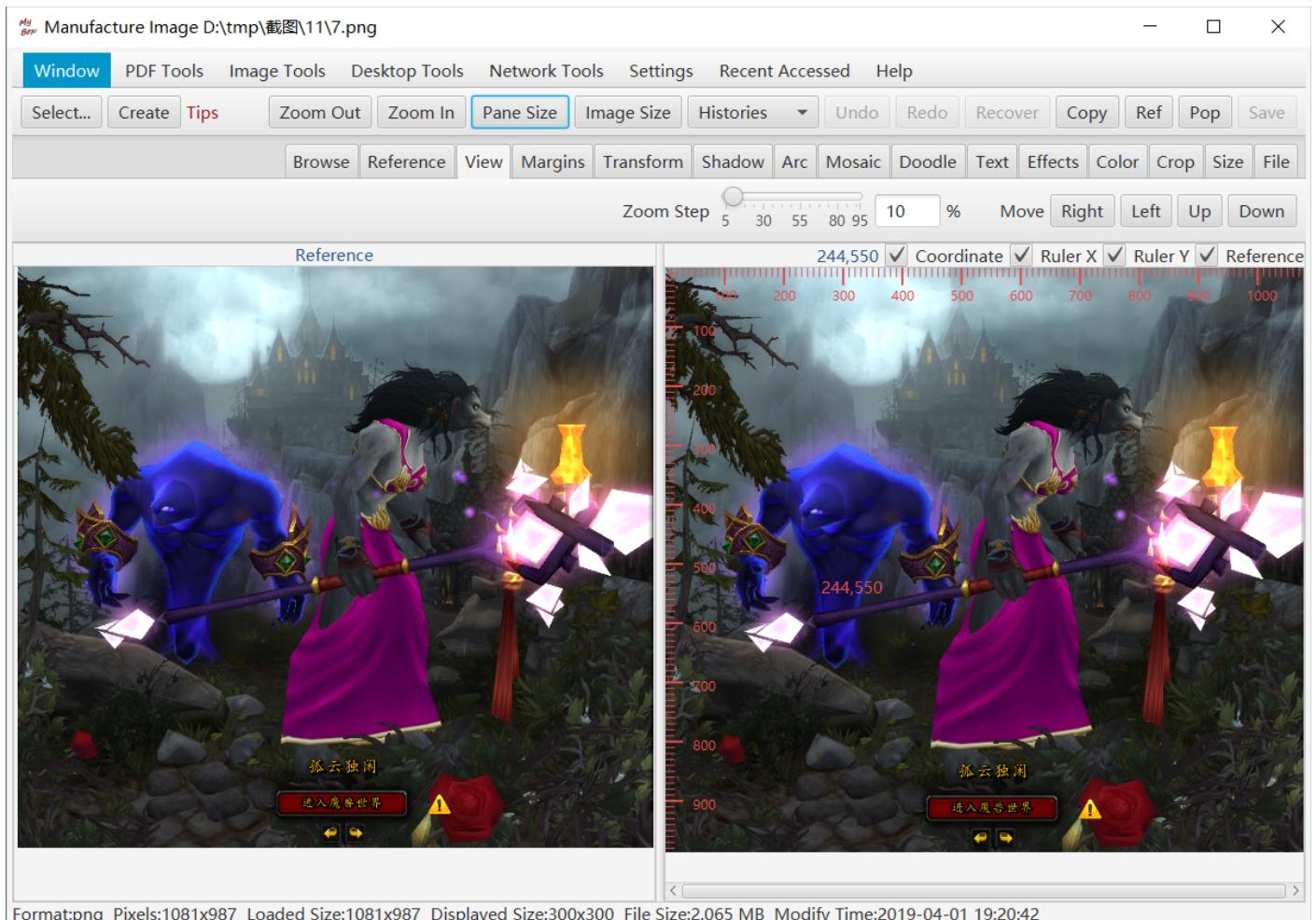
## 6.15.5 Cut Margins By Color

1. Select margins, color, and color distance.
2. Press button “Pick Color” to get color by clicking image.
3. Click button “OK” or press ENTER to cut the margins.



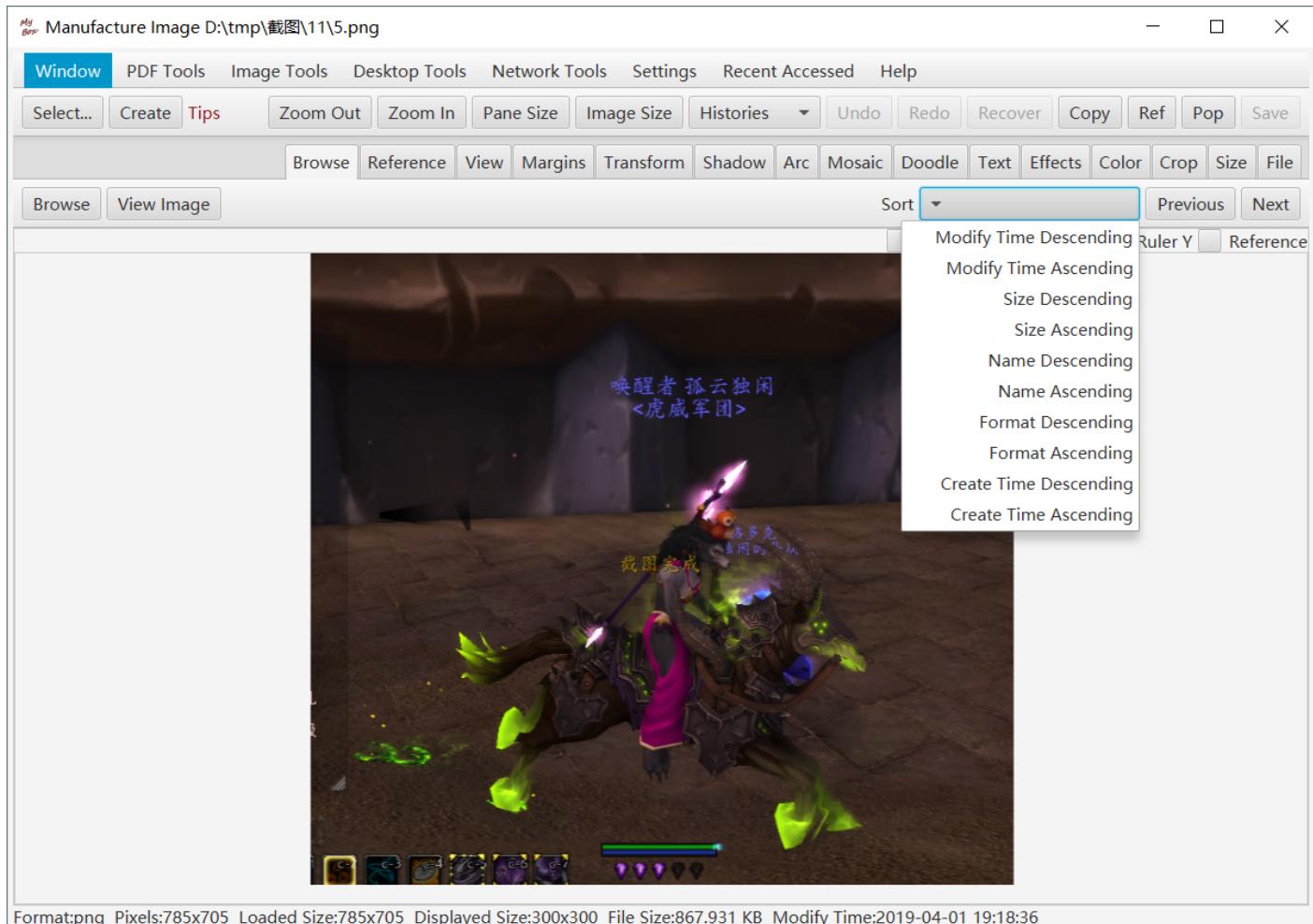
## 6.16 View

1. Zoom and move image, which will not change image.
2. Step of zooming can be set.
3. Zooming and moving can be applied against both original image and reference image.
4. Select whether show coordinate, X ruler, and Y ruler.



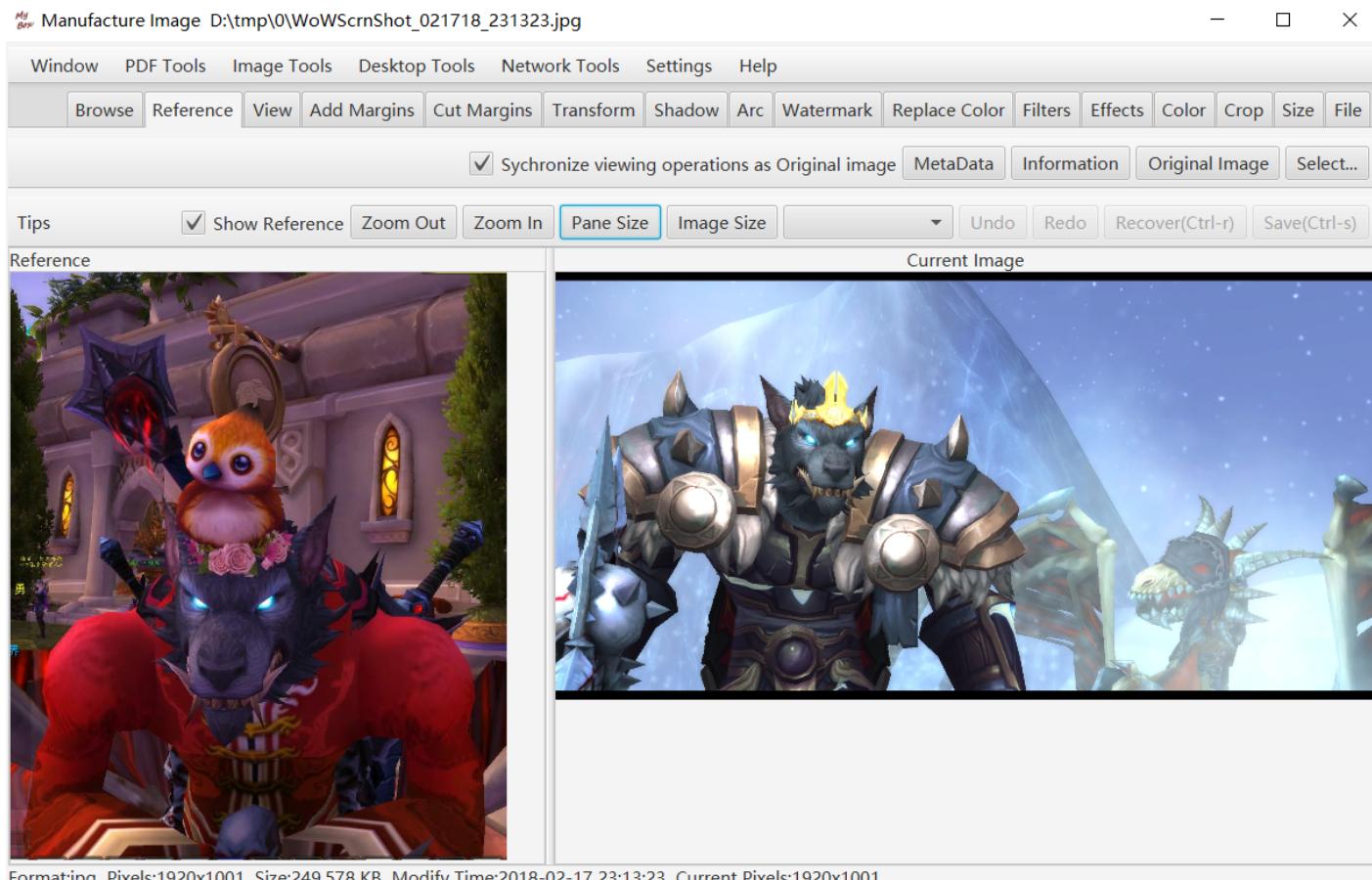
## 6.17 Browse

- 1) Browse image files under same directory.
- 2) Order the files by file names, modify time, file size, or format.



## 6.18 Reference Image

1. Select whether display the reference image on hot bar.
2. Other image can be selected as the reference image.
3. Meta data and attributes of the reference image can be viewed.
4. Select whether synchronize viewing operations like moving and zooming with original image.



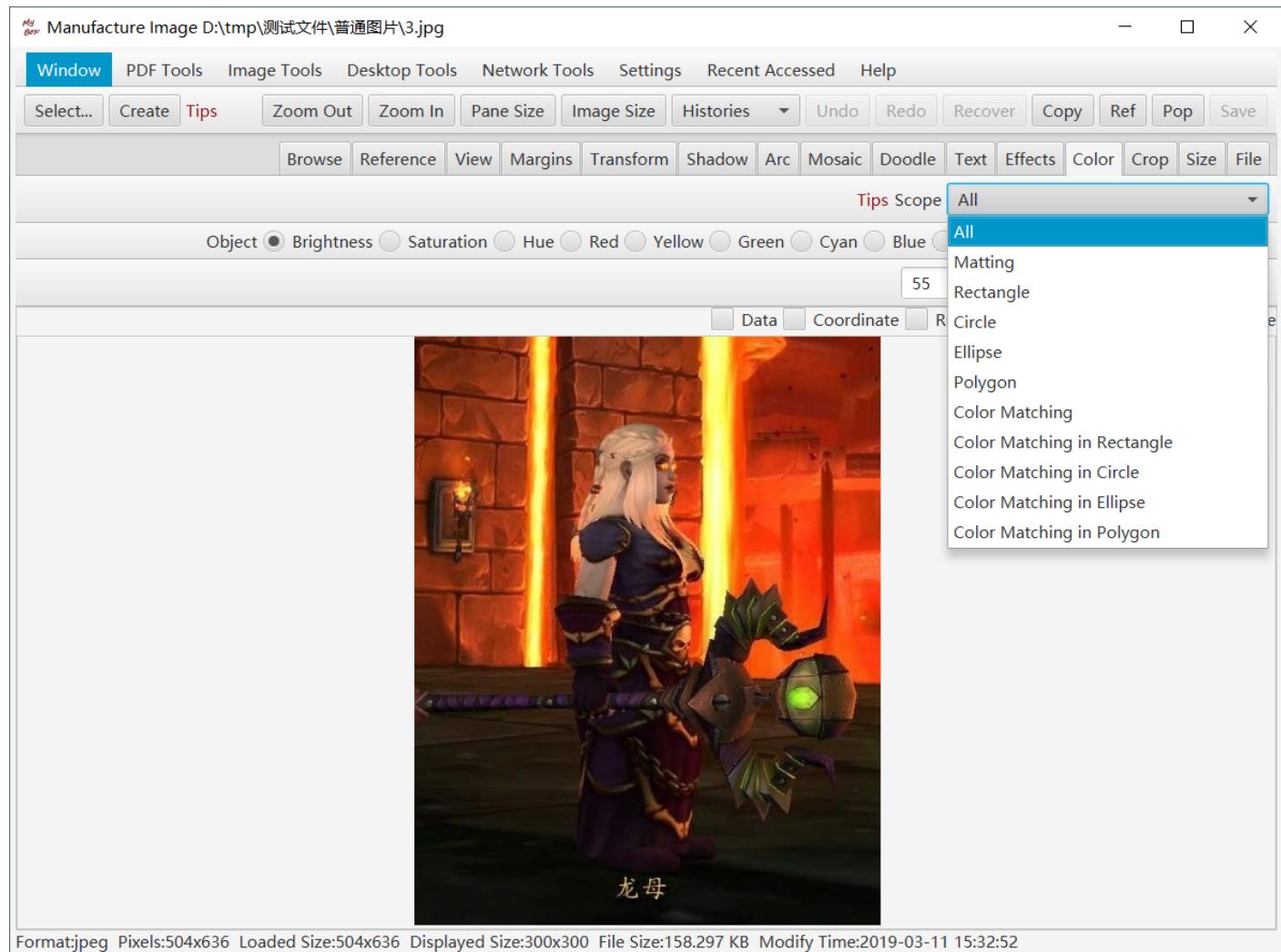
## 6.19 About “Scope” for Image Manufacture

### 6.19.1 Types of Scope

“Scope” is to determine which pixels in the image will be handled. Pixels within the scope will be handled by the operation and pixels outside the scope will keep their values.

Scope can be applied for following operations: “Color Adjustment” and “Effects”.

Types of scope include: “All”, “Matting”, “Shape”(Rectangle/Circle/Ellipse/Polygon), “Color Matching”, “Color Matching in Shape”.



Move mouse upon the red label beside the scope selector and information will be popped:

The screenshot shows a user interface for image tools. At the top is a toolbar with buttons for Reference, View, Margins, Transform, Shadow, Arc, Mosaic, Doodle, Text, Effects, Color, Crop, Size, and File. Below the toolbar is a dropdown menu with 'Tips' and 'Scope' selected, and a 'All' option. A tooltip window is displayed, providing instructions for setting different types of scopes:

- To set matting scope:
  - 1) Click scope view(left view) or image view(right view) to set points in image.
  - 2) Set the color attribute and color distance to define how to match colors.
- To set rectangle scope, in right image view:
  - 1) Drag anchors on the rectangle line to adjust the area.
  - 2) Double click primary mouse button to set left-top corner.
  - 3) Double click secondary mouse button to set right-bottom corner.
  - 4) Drag the rectangle area to move it.
- To set circle scope, in right image view:
  - 1) Drag anchors on the circle line to adjust the area.
  - 2) Double click primary mouse button to set circle center.
  - 3) Double click secondary mouse button to set circle radius.
  - 4) Drag the circle area to move it.
- To set ellipse scope, in right image view:
  - 1) Drag anchors on the ellipse line to adjust the area.
  - 2) Double click primary mouse button to set X radius.
  - 3) Double click secondary mouse button to set Y radius.
  - 4) Drag ellipse area to move it.
- To set polygon scope, in right image view:
  - 1) Click image to set vertexes of polygon.
  - 2) Polygon will be made automatically when number of vertexes is more than 2.
  - 3) Right click image to move the polygon.
- To set colors scope:
  - 1) When scope is "Colors Matching", click scope view(left view) or image view(right view) to pick colors from image.
  - 2) When scope is also related to area(like "Colors in Circle"), pick colors only by clicking scope view(left view), and clicking image view(right view) does not work for colors picking.
  - 3) Colors can be selected with color picker directly.

Notice: When the interface has button "Pick Color" and it has been pressed, clicking image will pick color for the interface and above will not work.

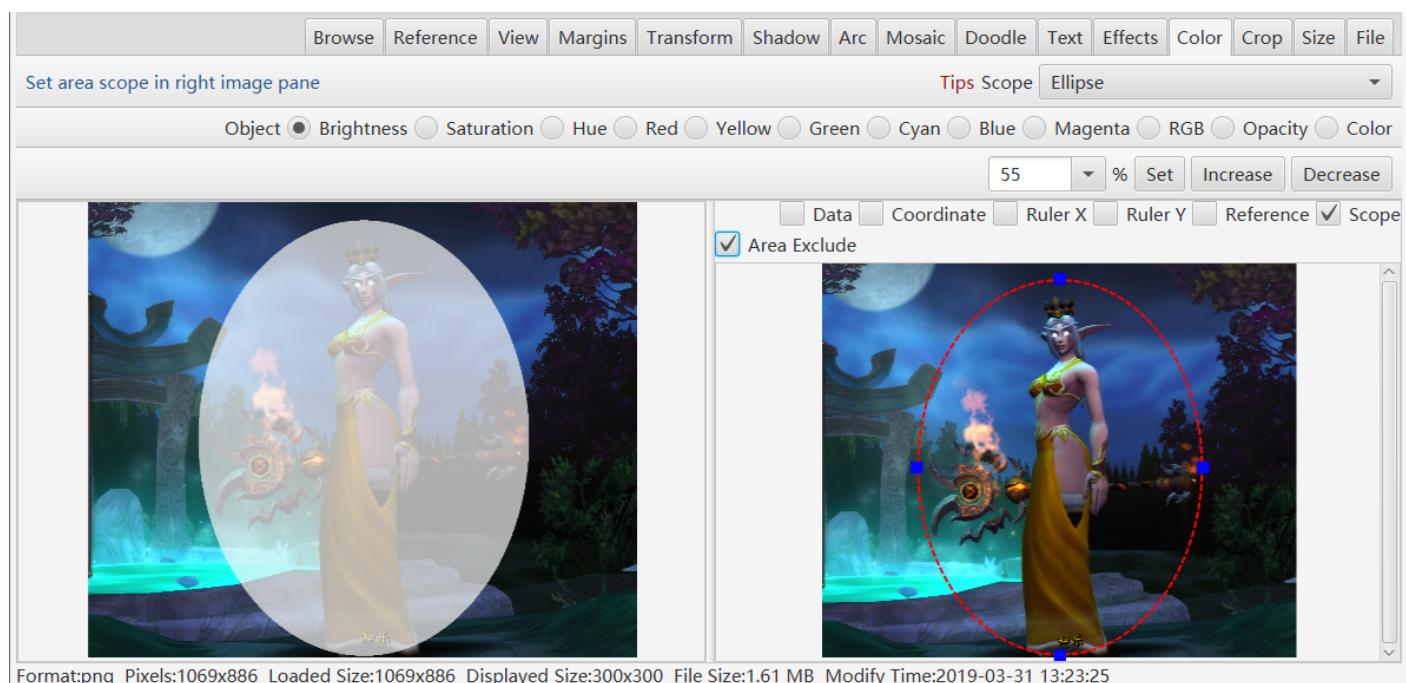
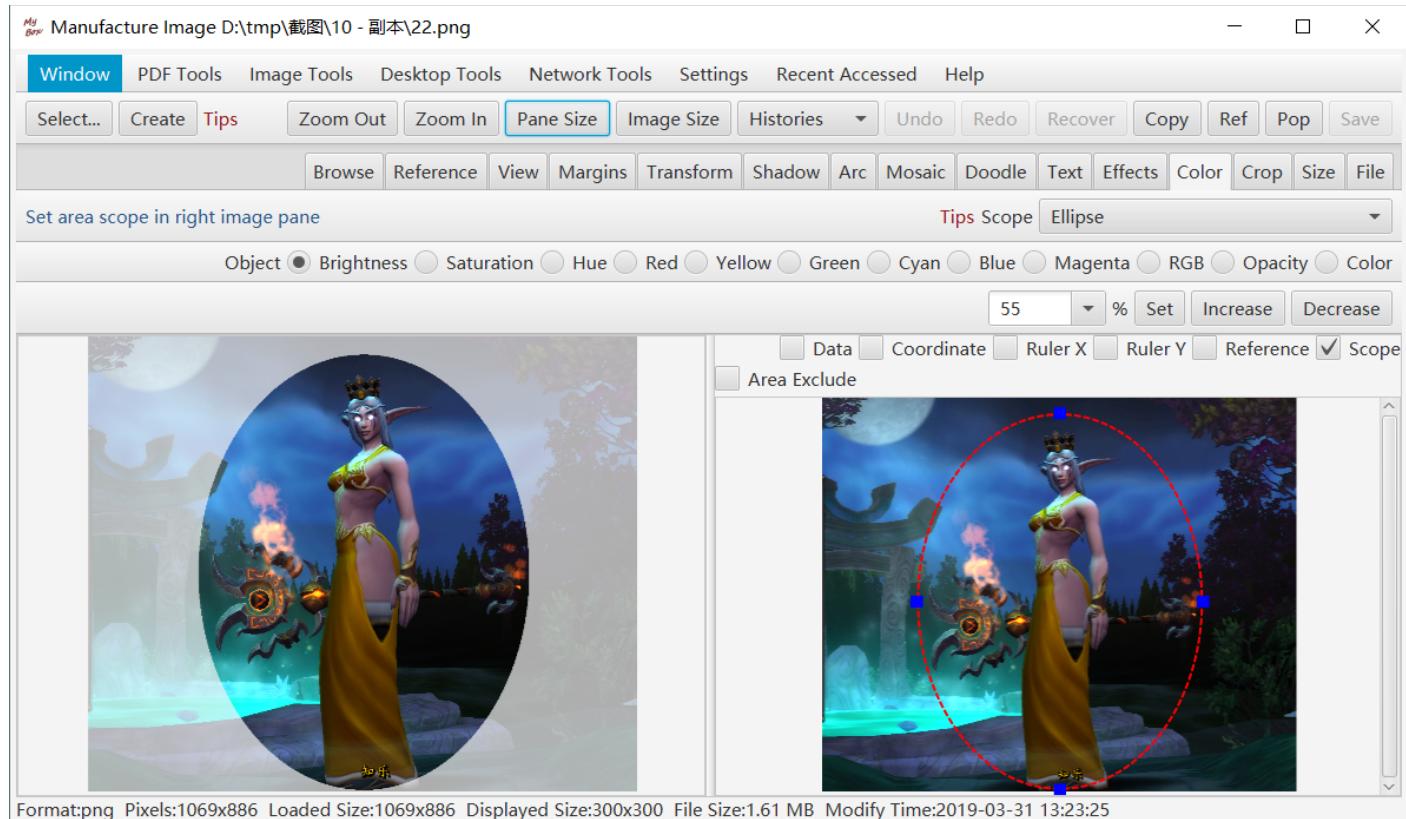
Color and width of lines and anchors can be changed by "Setting" function in main menu.

## 6.19.2 Scope View

When scope type is not “All”, “Scope View” will be shown at left side of “Image View”. Parameters are shown as the selected scope type.

In Scope View, pixels inside the scope are shown in their original color while pixels outside the scope are shown in half-opacity.

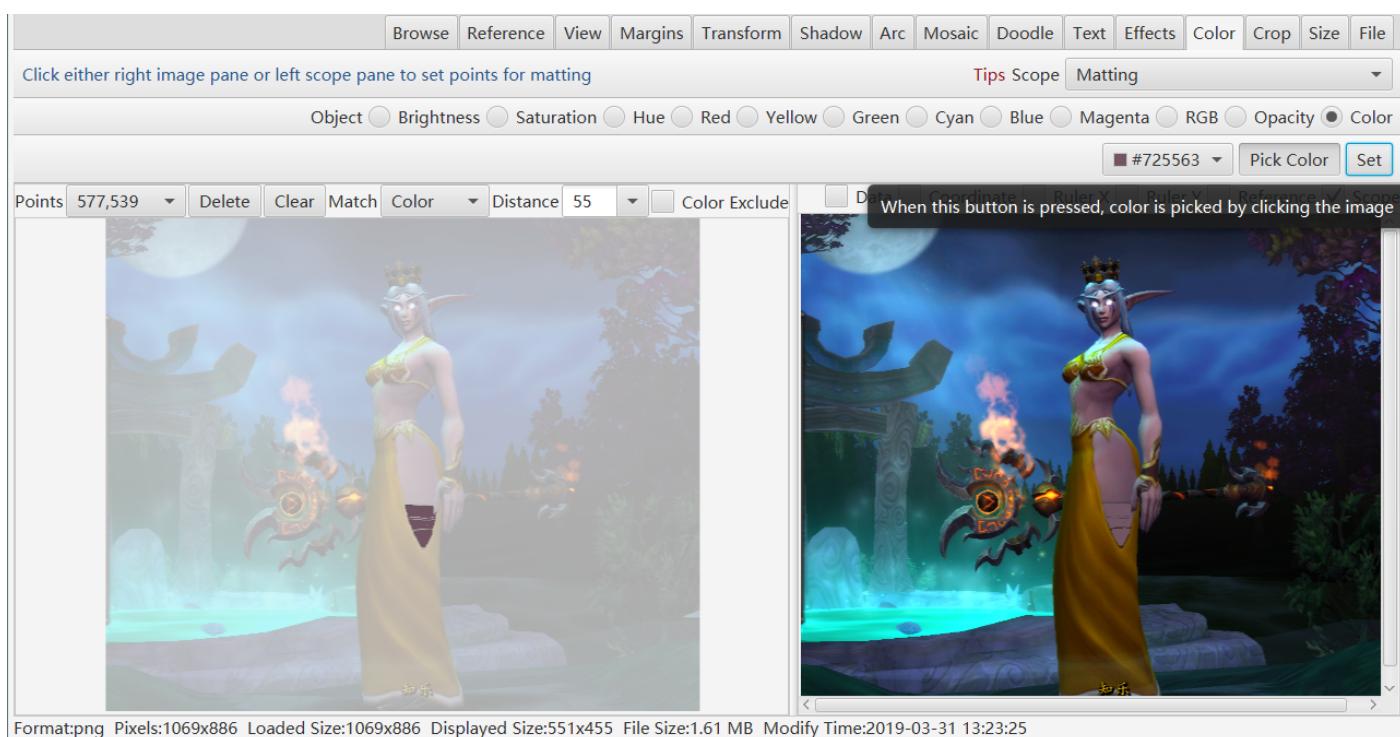
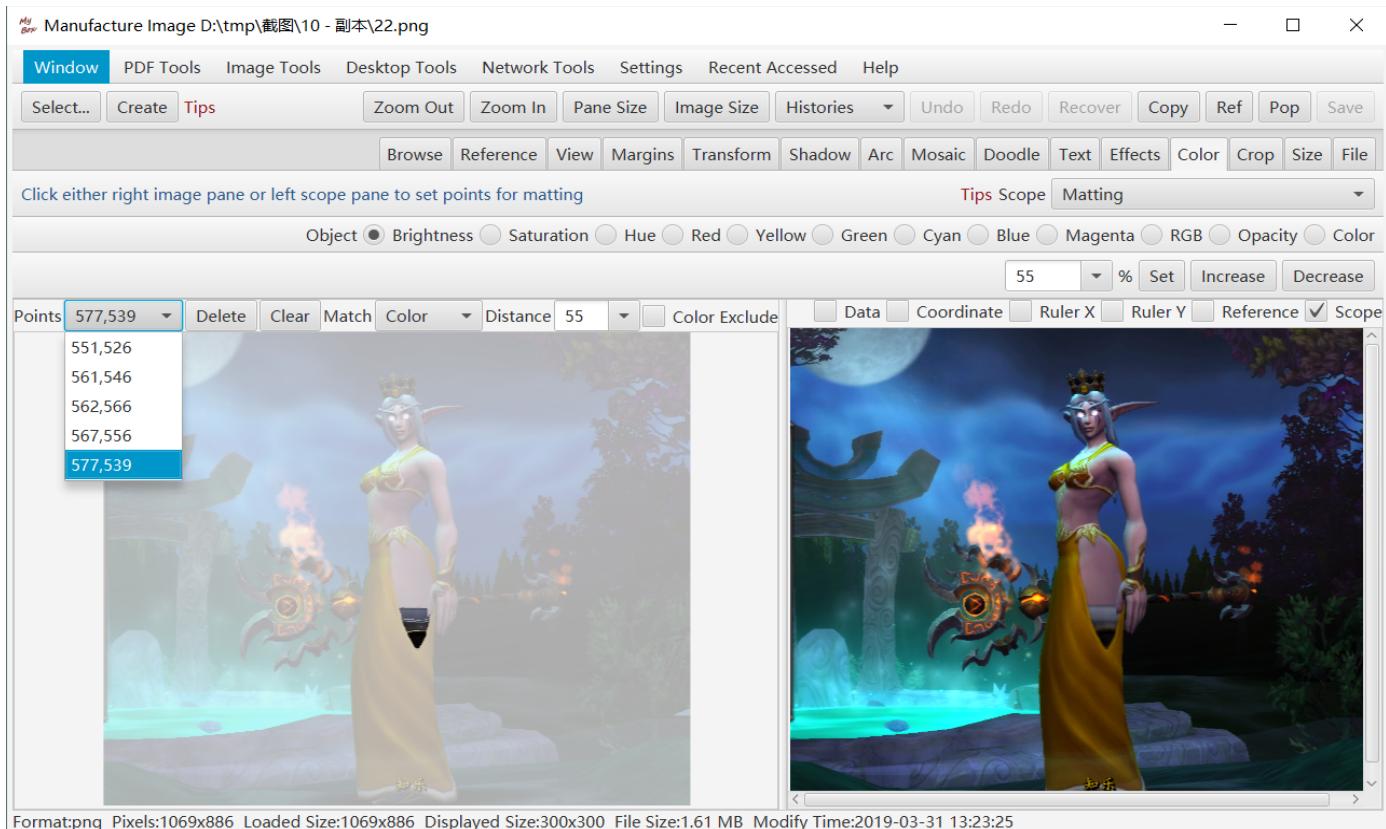
Below is comparison of the scopes inside and outside an ellipse.



### 6.19.3 Matting

“Matting” is like “Magic Wand” of PhotoShop or “Bucket Fill” of Paint on Windows.

1. Set the distance of color matching, and click the image to pick points. The matched area will be caculated automatically. Multiple points will make accumulated results.
2. Select item in the points list and click button “Delete” to remove the item from the list.
3. Click button “Clear” to empty the points list.



## 6.19.4 Color Matching

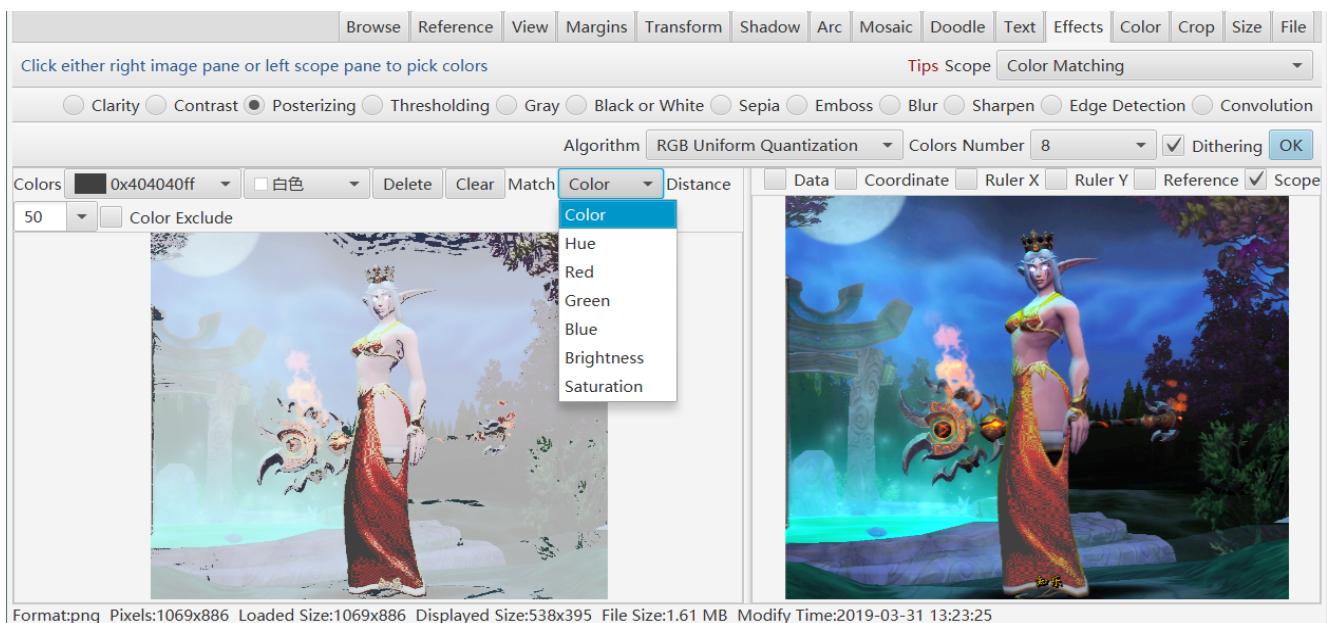
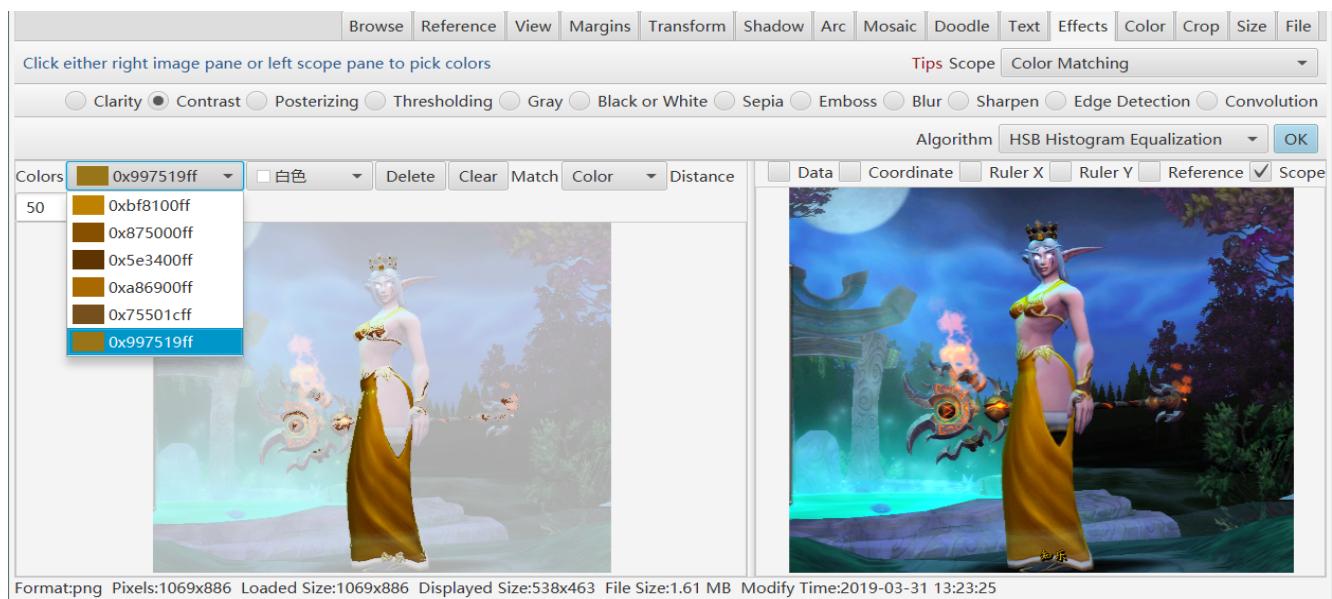
"Color Distance" indicates the difference between 2 colors. "Color difference" can be referred as:

[https://en.wikipedia.org/wiki/Color\\_difference](https://en.wikipedia.org/wiki/Color_difference)

When the difference is less than the defined distance value, it means the 2 colors are "Matched". When the distance is defined as zero, it means color must be matched accurately. Multiple colors can be selected to compare with pixels in the image. Their relationship is "OR", which means pixel's color can match any of defined color.

"Color Matching" can be based on any of following aspects: brightness, saturation, hue, red/green/blue channel, and whole RGB.

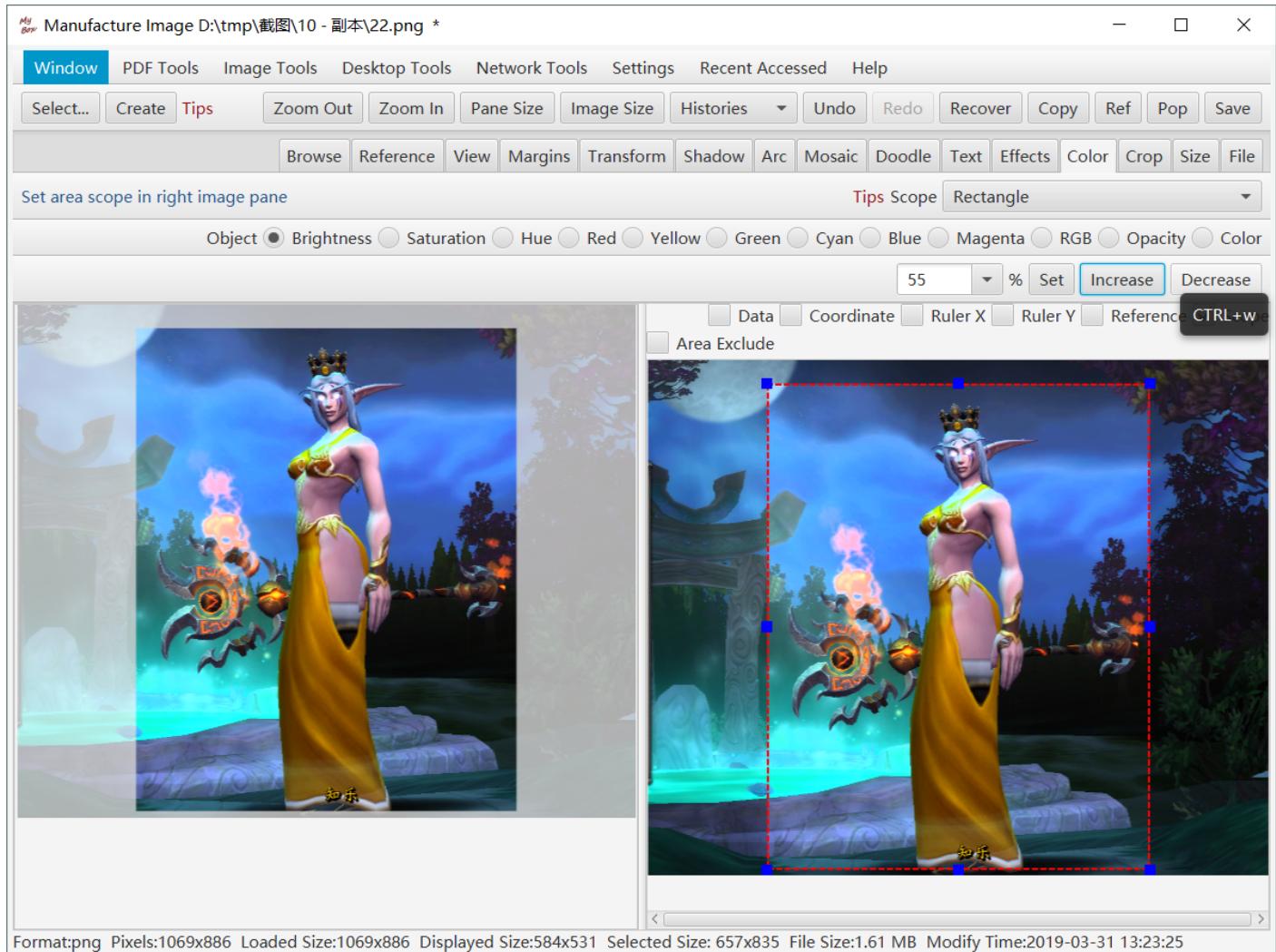
1. Select color aspect, and input color distance.
2. Click the image to pick colors. The matched area will be calculated automatically. Multiple colors will make accumulated results.
3. Select item in the colors list and click button "Delete" to remove the item from the list.
4. Click button "Clear" to empty the colors list.



## 6.19.5 Rectangle Area

A rectangle dotted line with anchors will be shown in Image View are right side. Drag anchors to adjust the area, and drag the rectangle to move it.

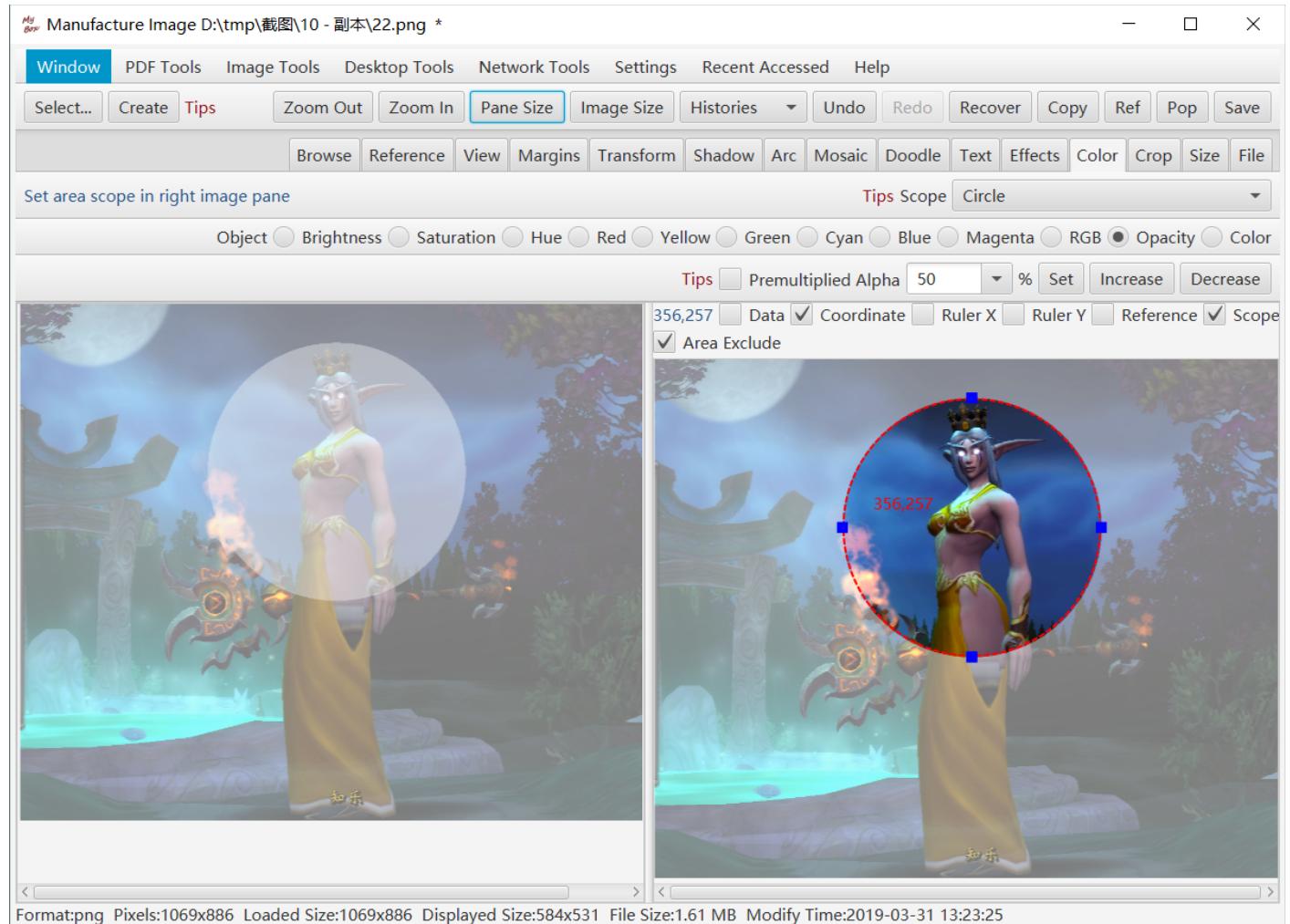
Or double left click to set left-top corner and double right click to set right-bottom corner.



## 6.19.6 Circle Area

A circle dotted line with anchors will be shown in Image View are right side. Drag anchors to adjust the area, and drag the circle to move it.

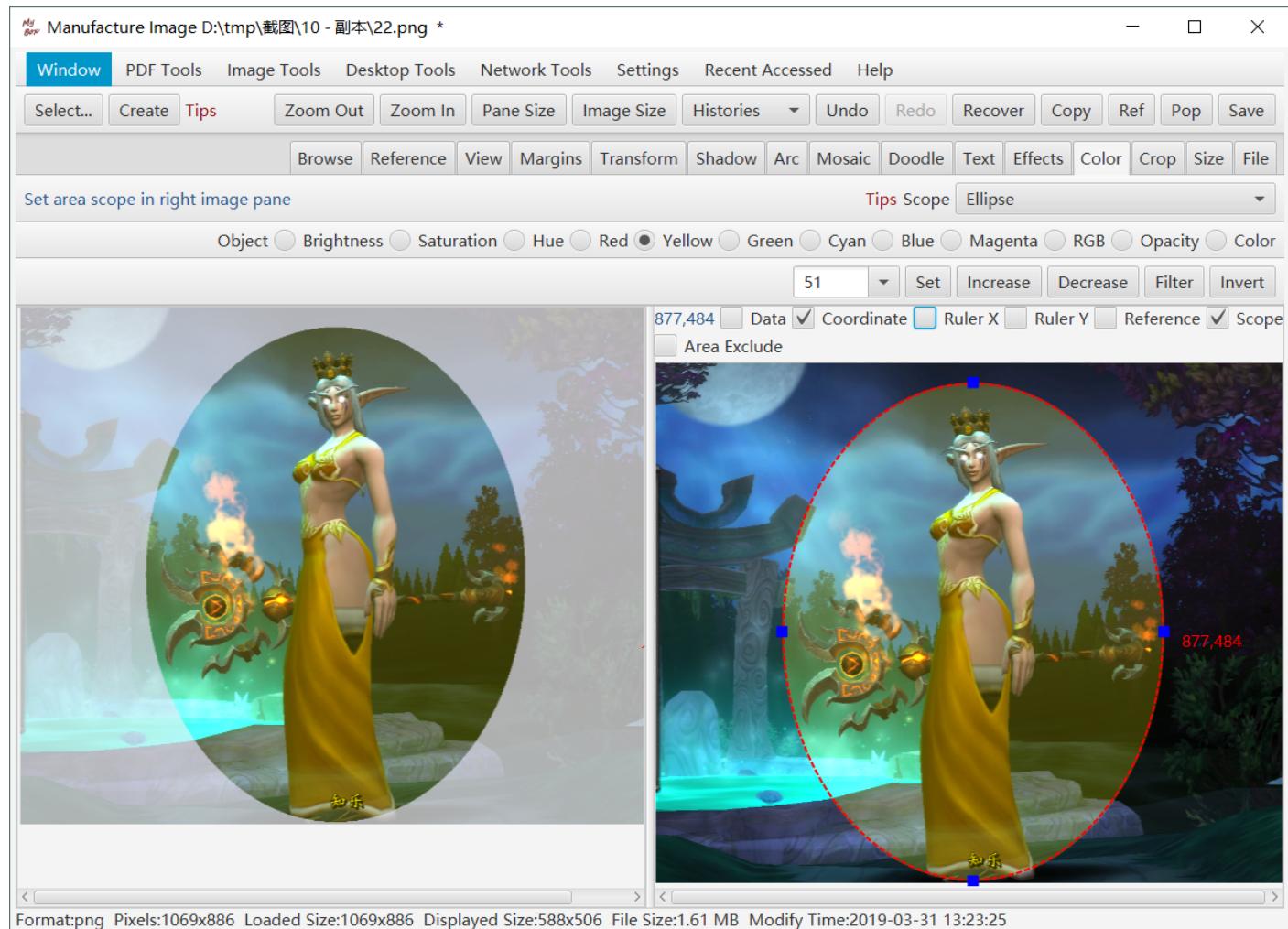
Or double left click to set circle center and double right click to set circle radius.



## 6.19.7 Ellipse Area

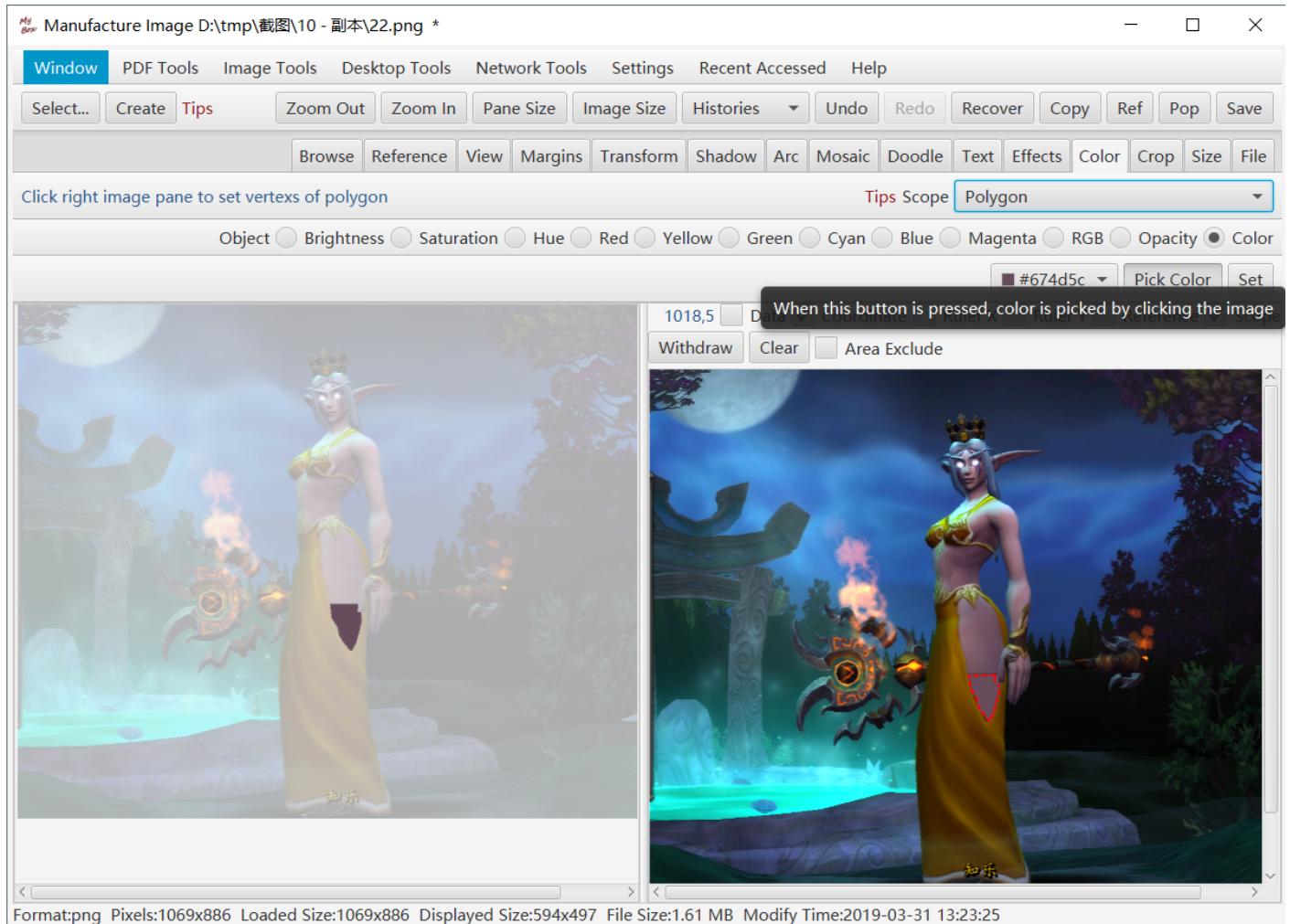
A ellipse dotted line with anchors will be shown in Image View are right side. Drag anchors to adjust the area, and drag the ellipse to move it.

Or double left click to set X radius and double right click to set Y radius.



## 6.19.8 Polygon Area

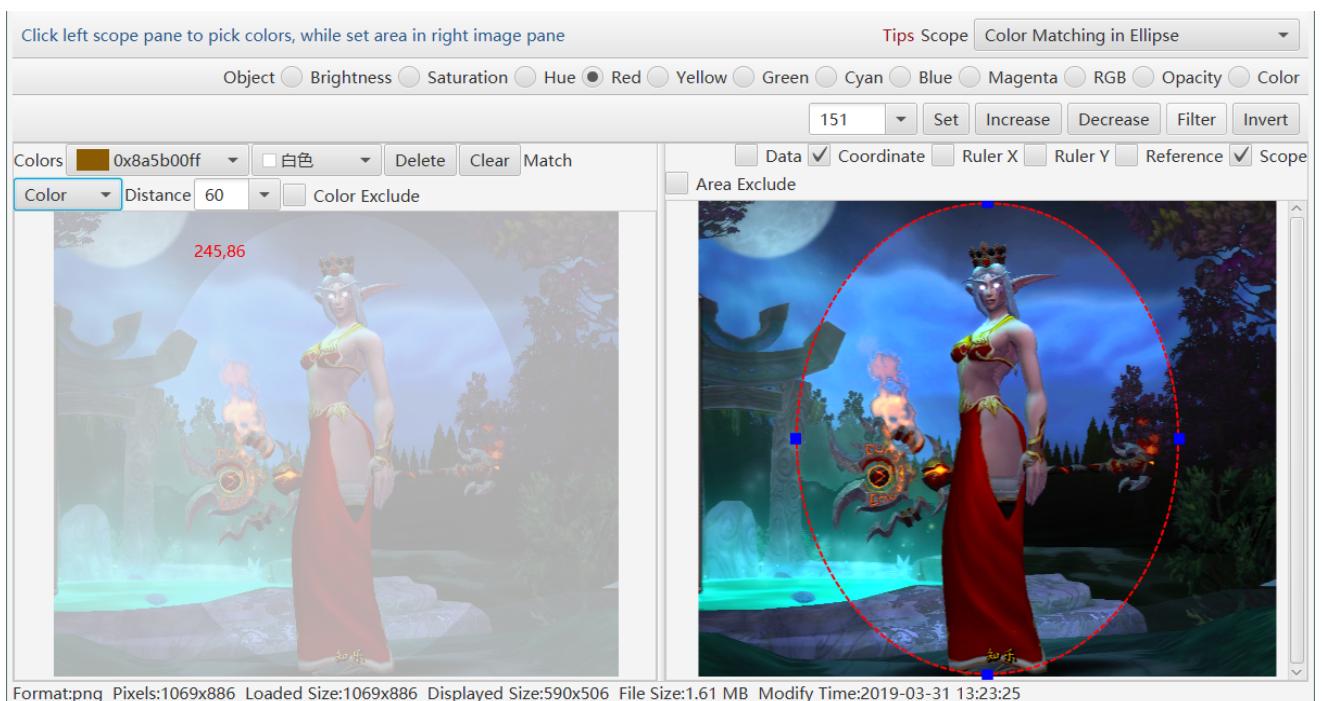
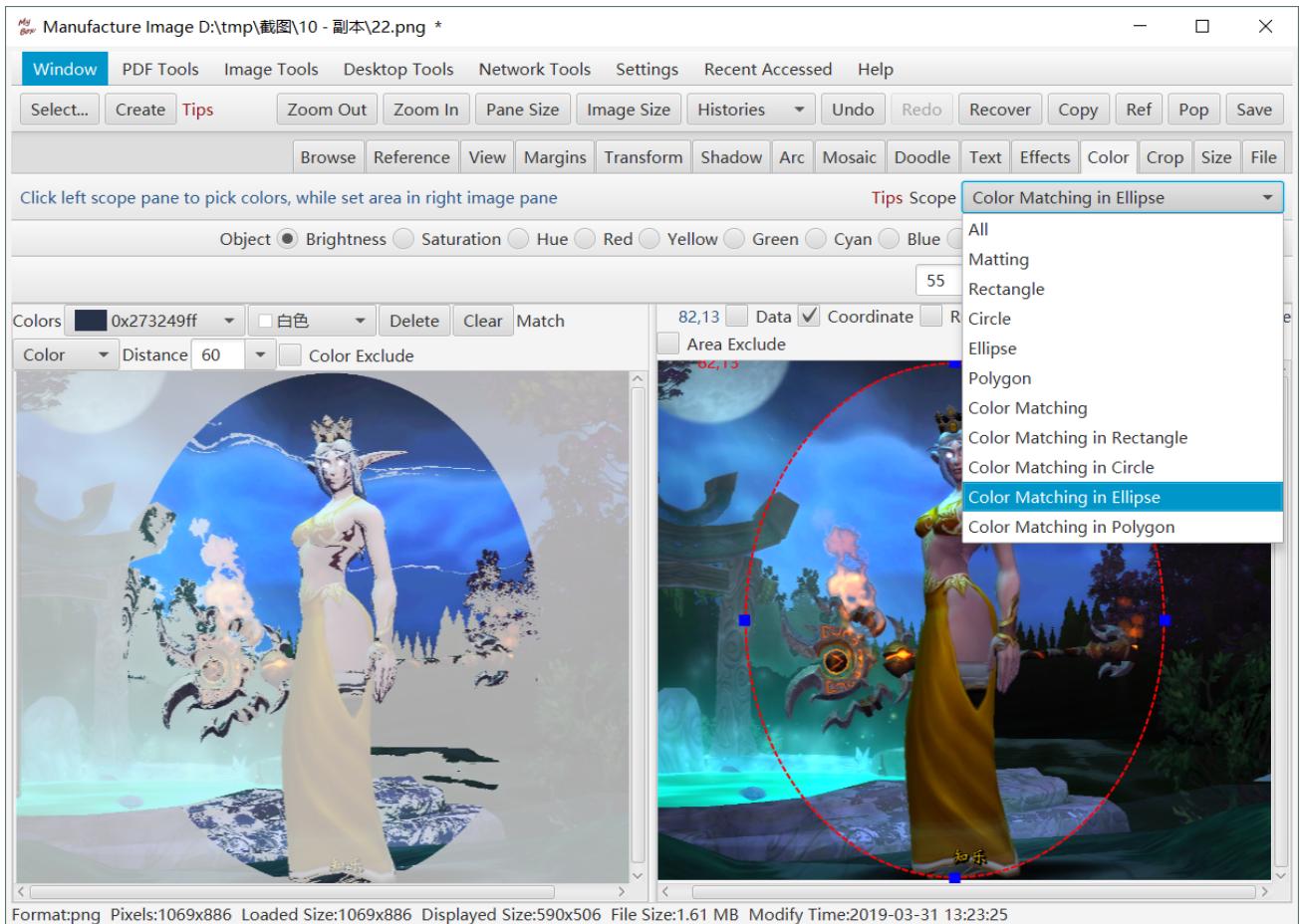
1. Click image view to set vertexes. When vertexes number is more than 2, the polygon will be generated and shown automatically. Right click to move the polygon.
2. Click button “Withdraw” to remove last added vertex.
3. Click button “Clear” to remove all vertexes.



## 6.19.9 Color Matching in Area

Area scope and color scope will work together:

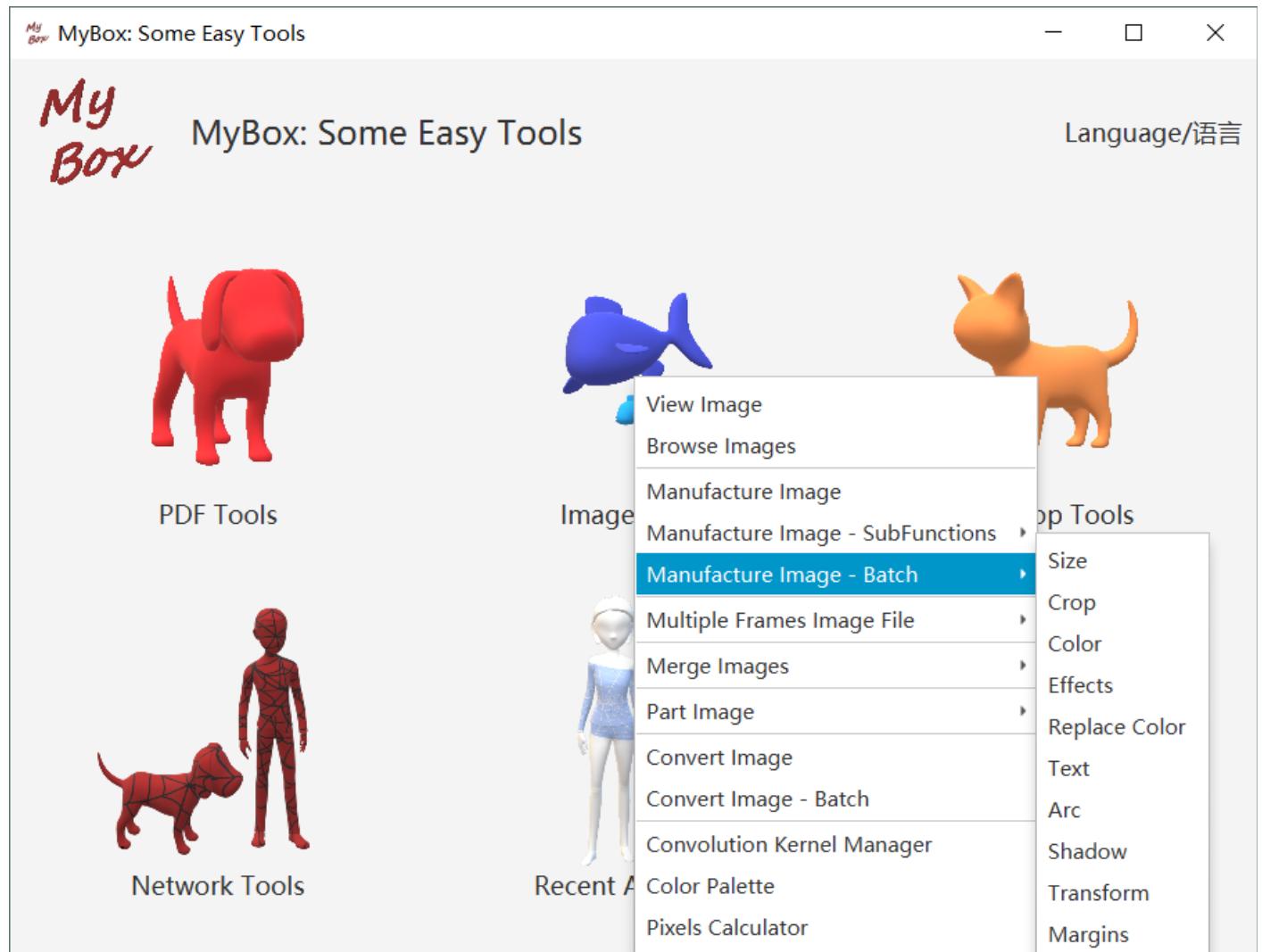
1. Pick colors by clicking scope view at left side
2. Adjust shape area in image view at right side.



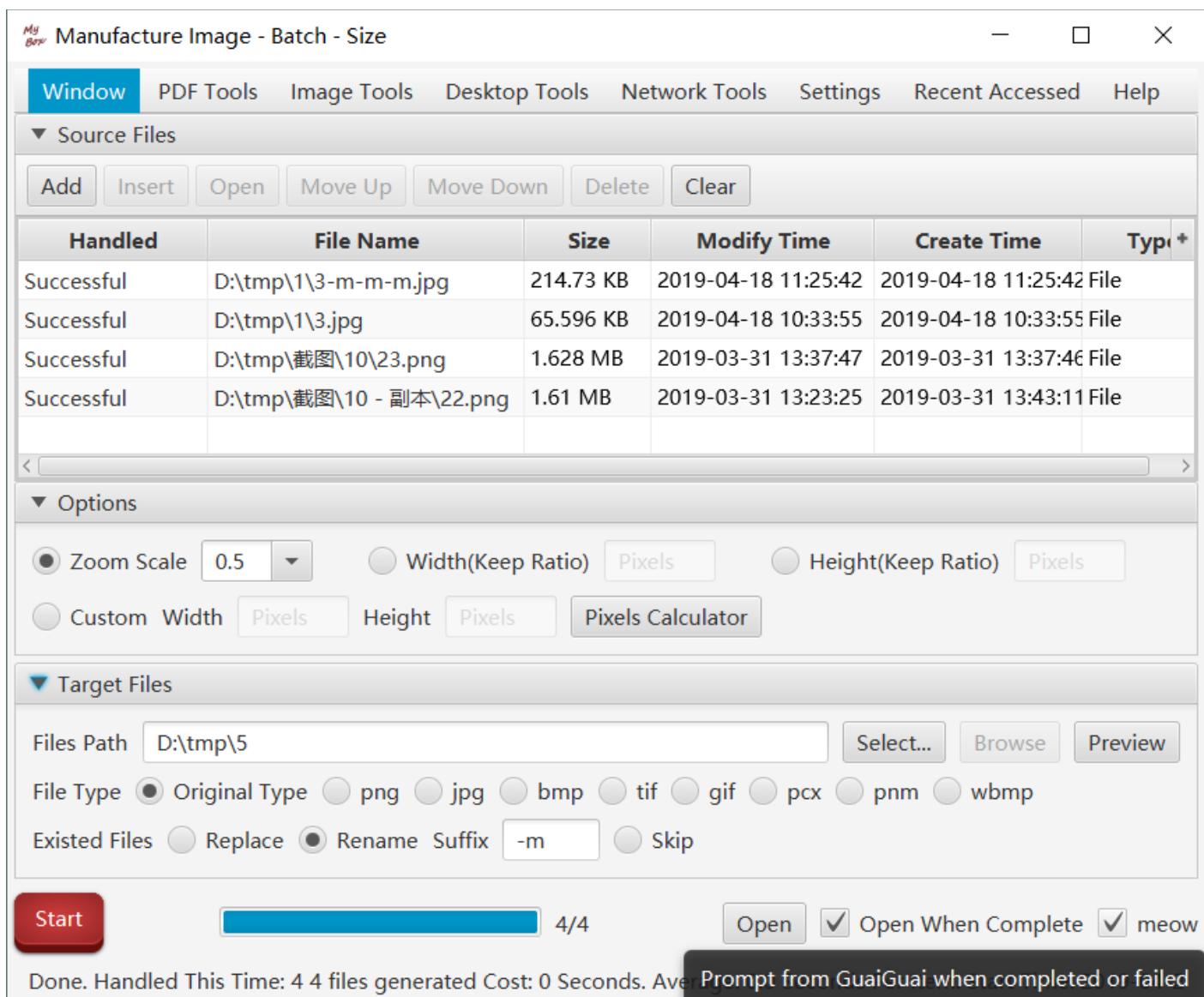
## 7 Image Manufacture in Batch

This category includes following tools for image manufacture: Size, Crop, Color, Effect, Convolution, Replace Color, Text, Arc, Shadow, Transform, Cut Margins, and Add Margins.

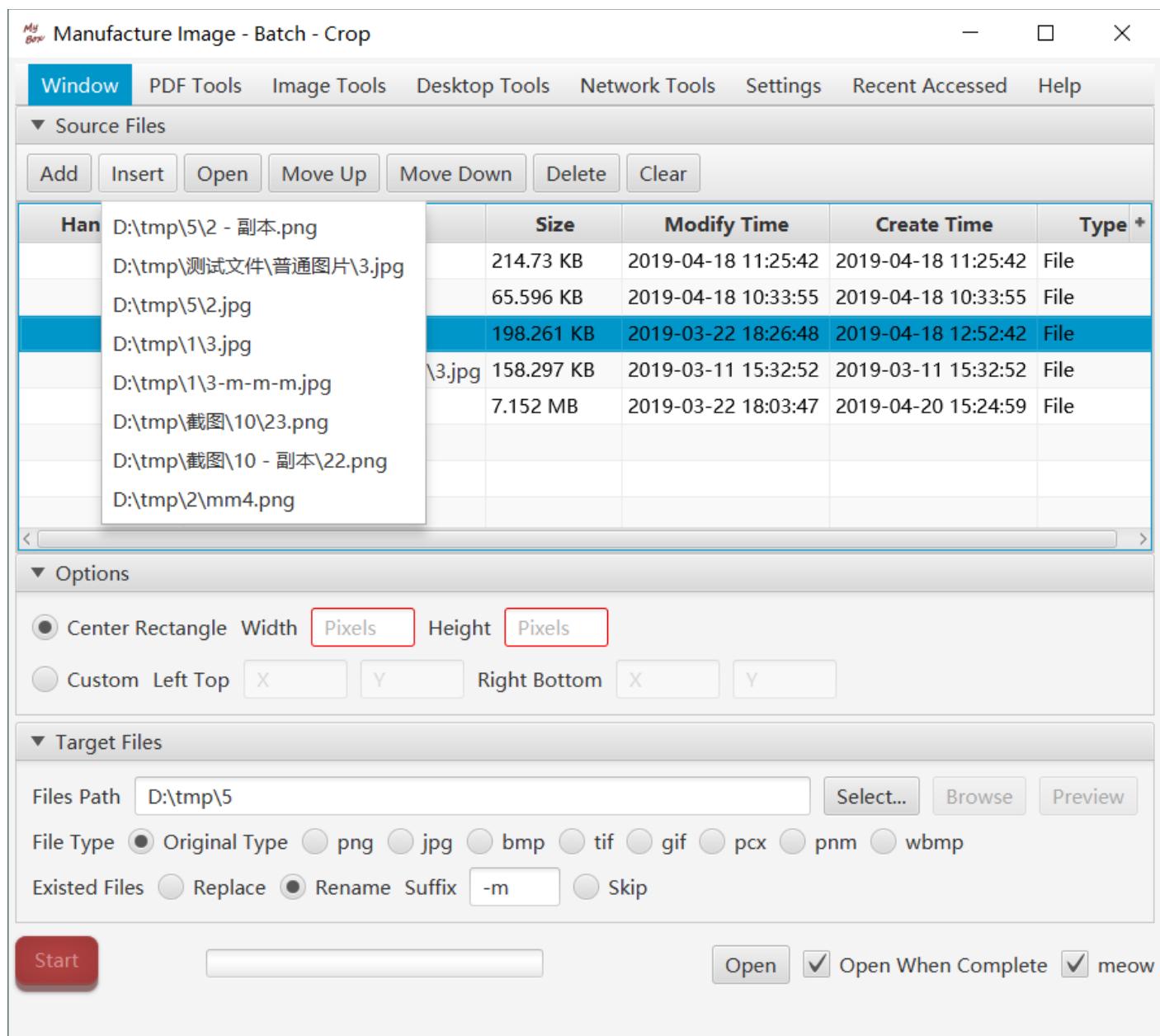
The interfaces for batch are different from those for single image. Part parameters are different since operations are not in interactive way.



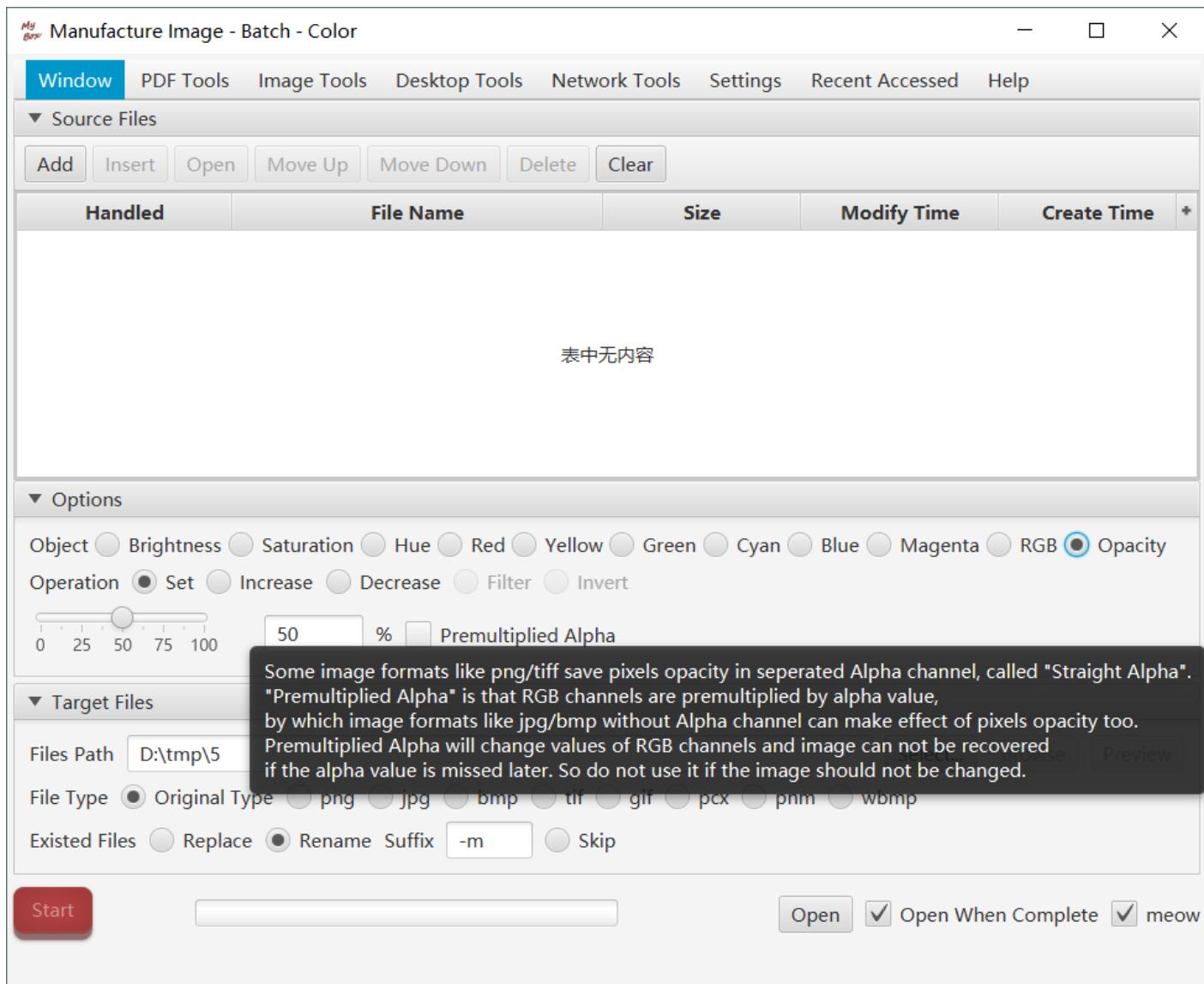
## 7.1 Size



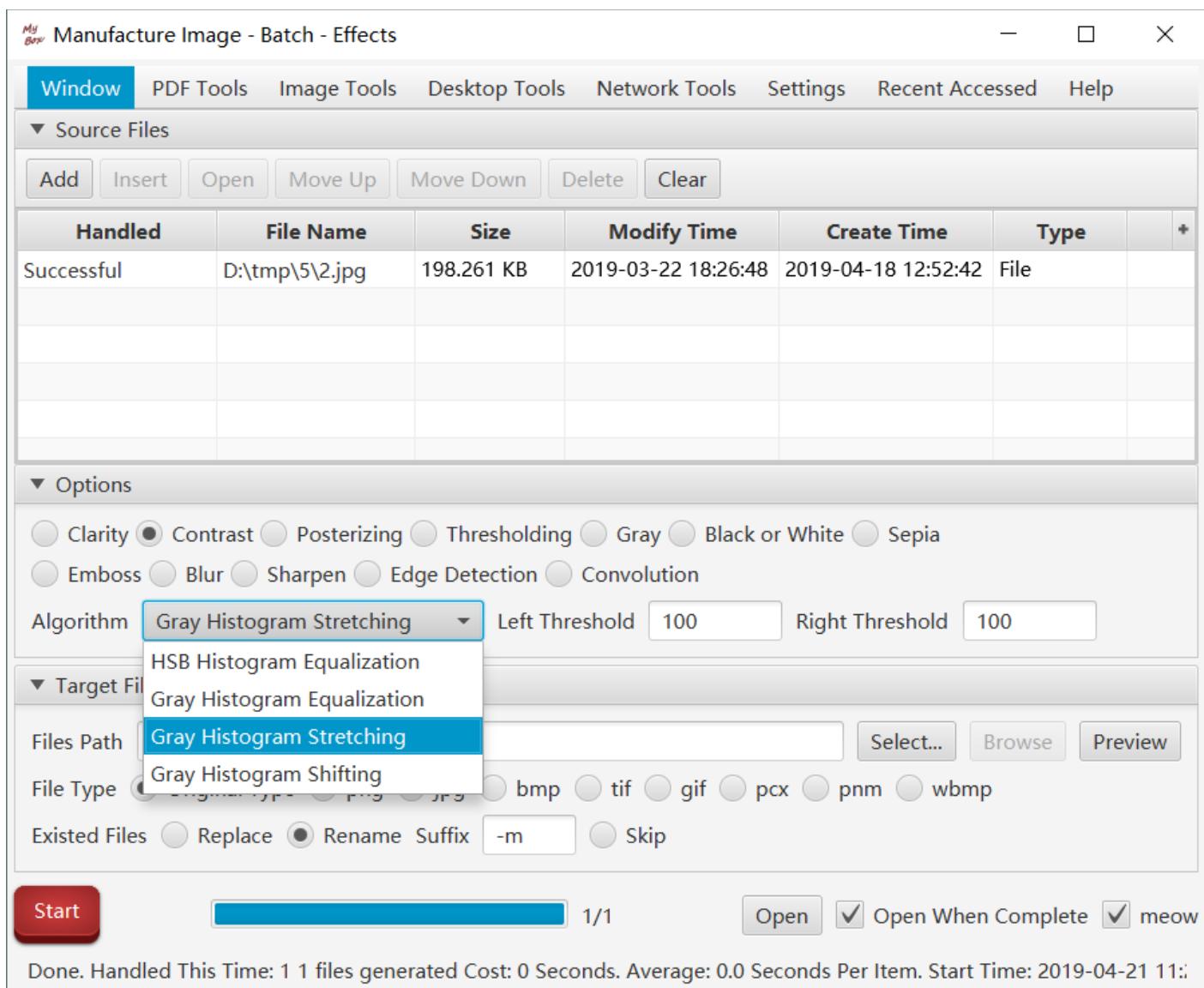
## 7.2 Crop



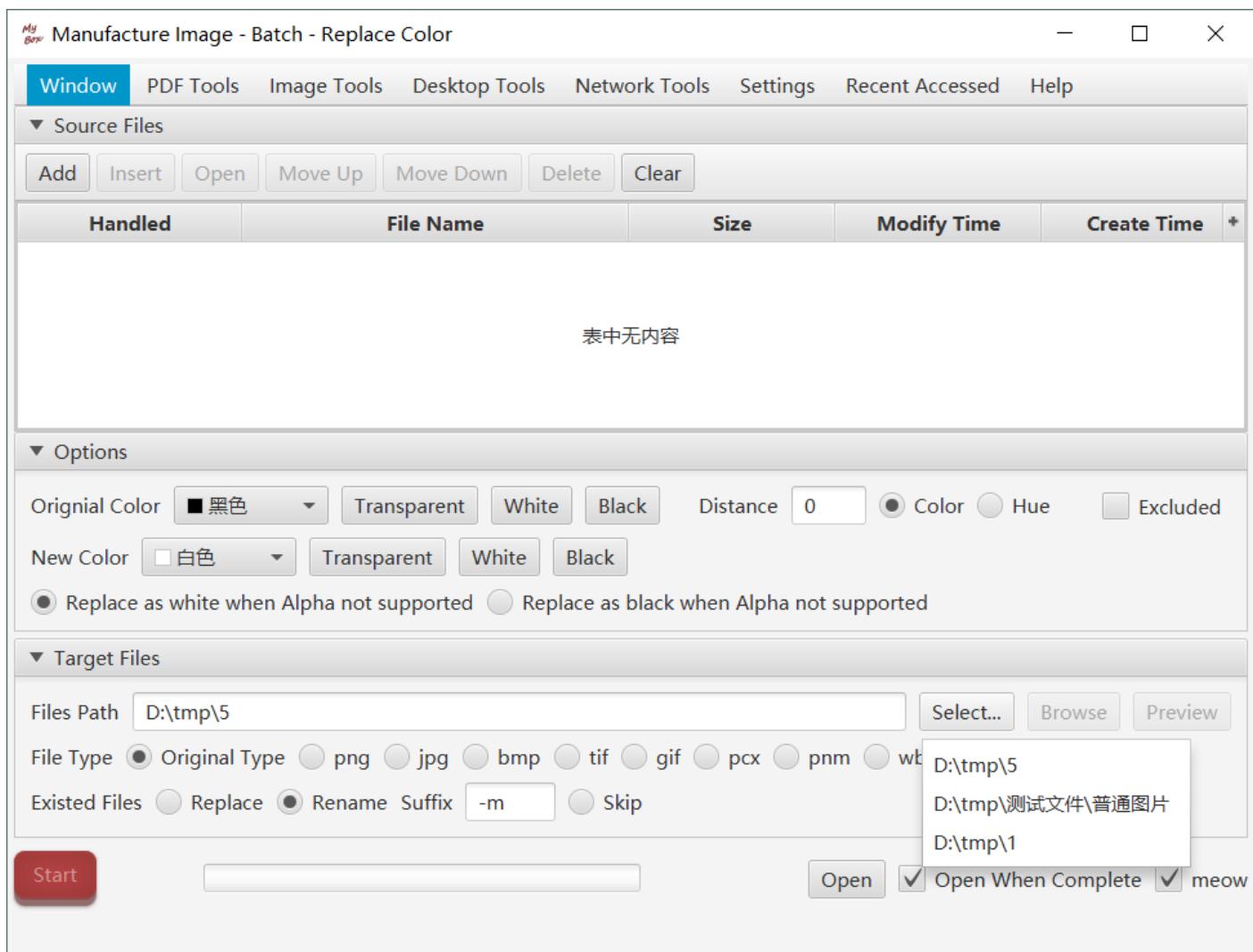
## 7.3 Color



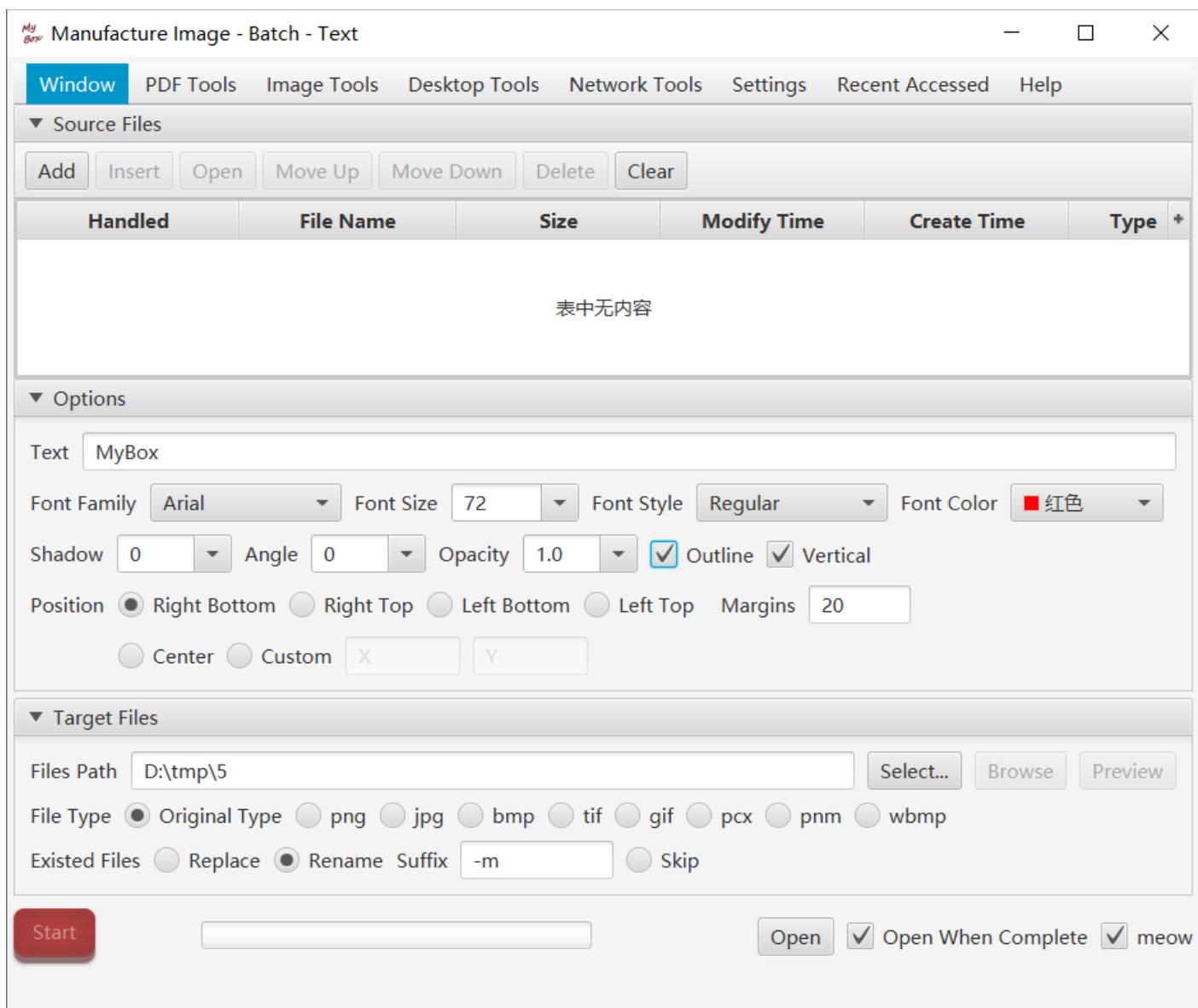
## 7.4 Effects



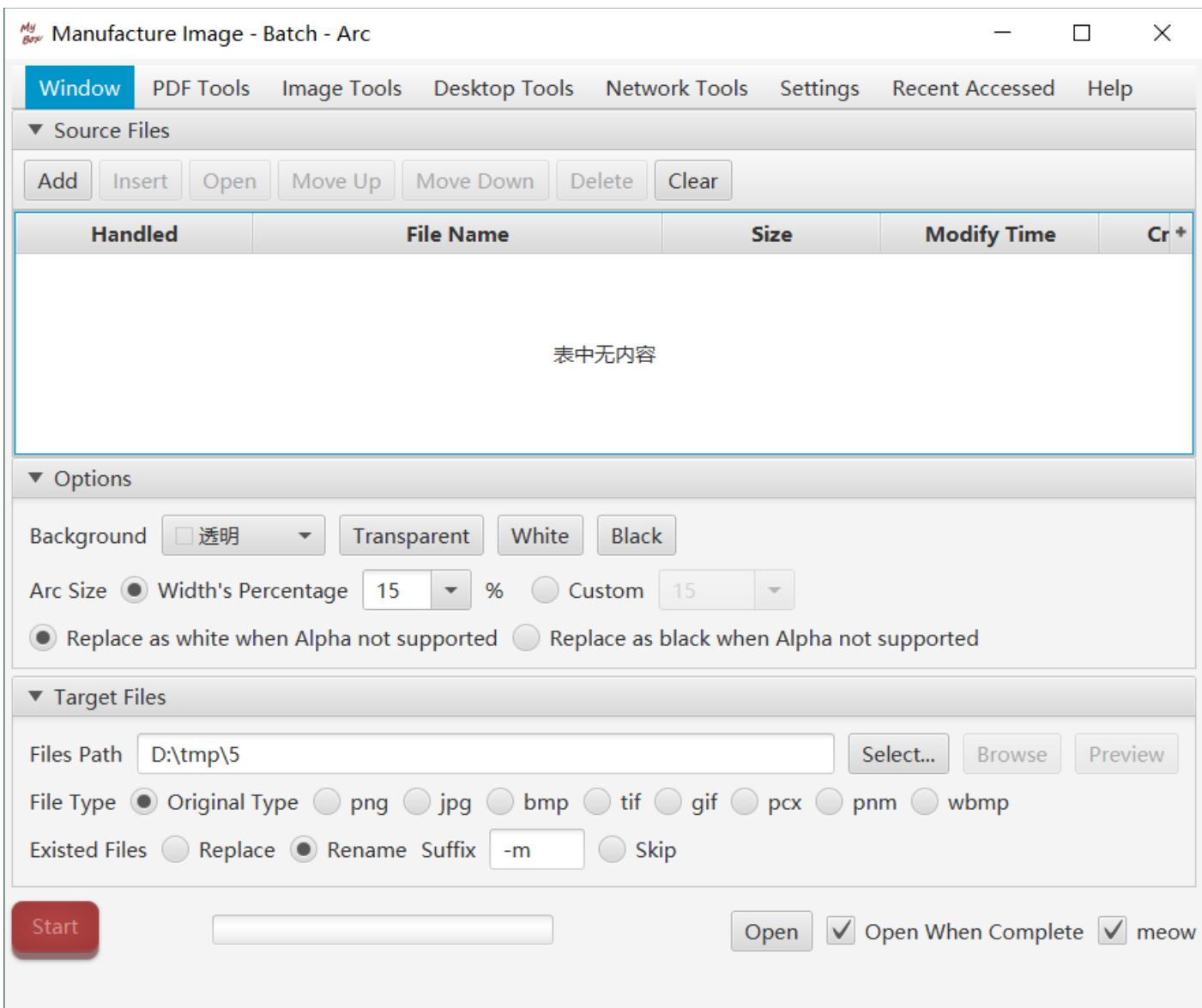
## 7.5 Replace Color



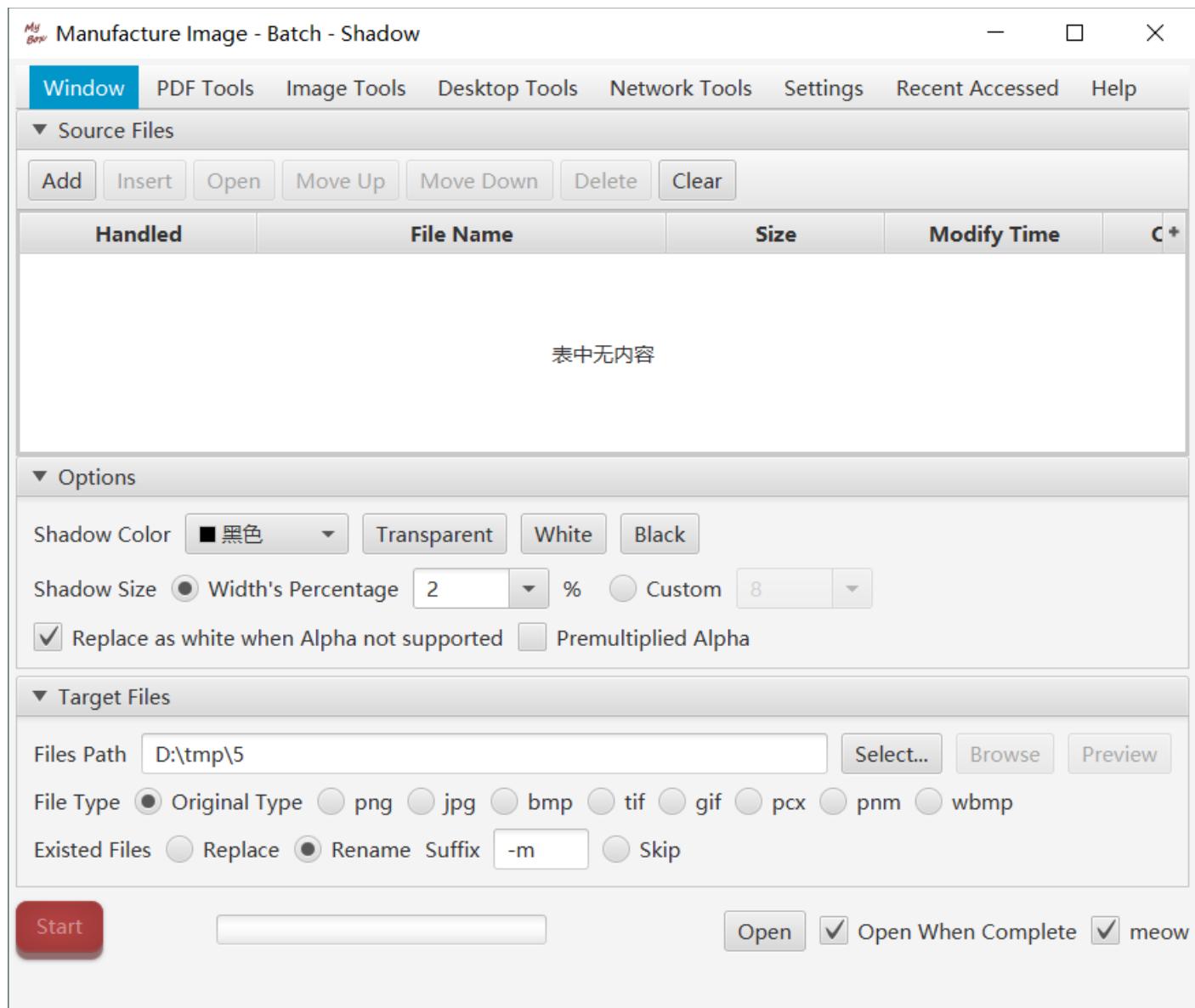
## 7.6 Text



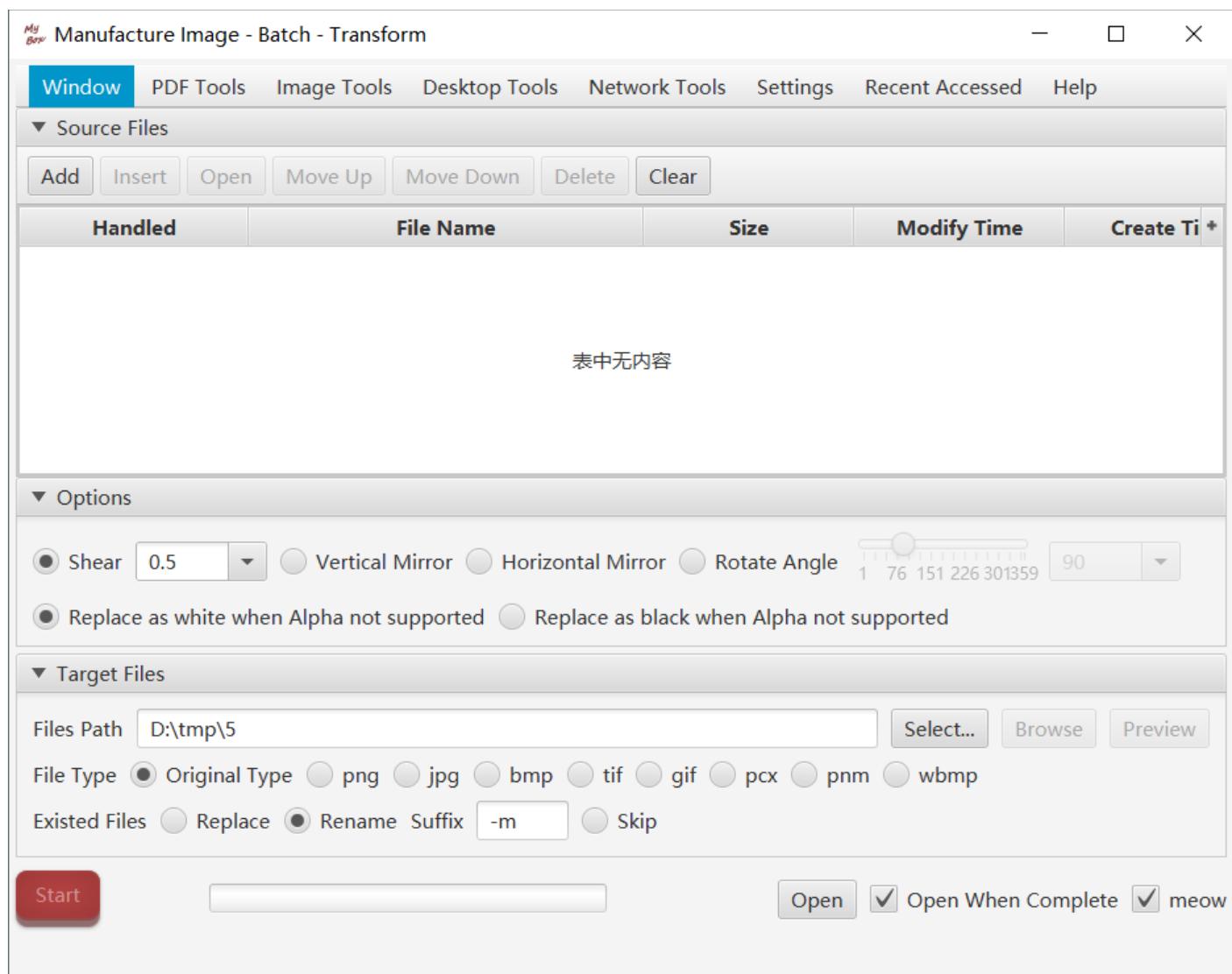
## 7.7 Arc



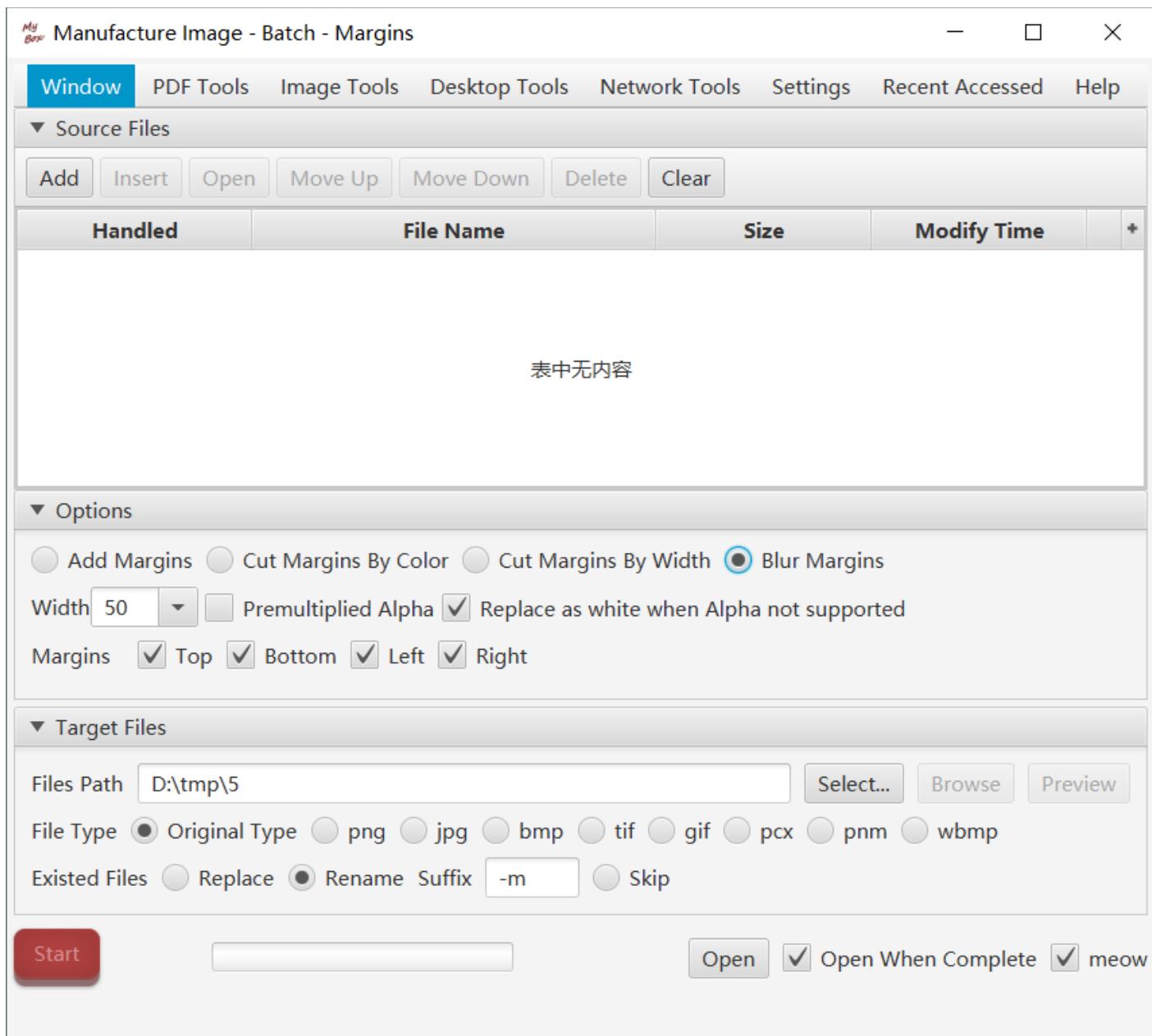
## 7.8 Shadow



## 7.9 Transform



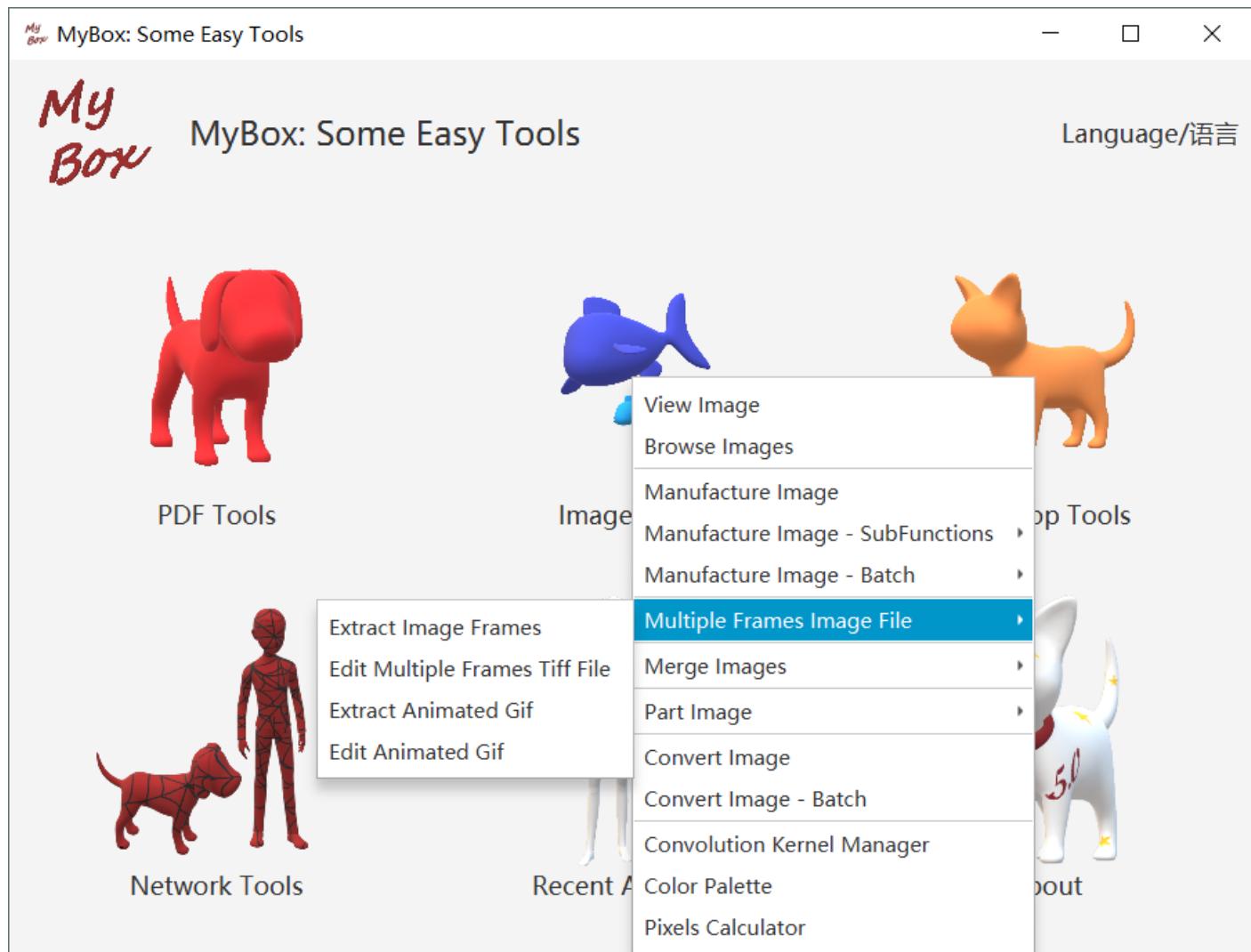
## 7.10 Margins



## 8 Multiple Frames Image file

The multiple frames image file is a file that includes several independent images. MyBox supports following formats of multiple frames image file: Animated Gif, and Multiple Frames Tiff/Tif file.

This category includes following tools: Extract Image Frames, Edit Multiple Frames Tiff File, Extract Animated Gif, and Edit Animated Gif.



## 8.1 View/Extract Image Frames

- 1) Open Multiple Frames Tiff File or Animated Gif.
- 2) All images in the opened file are fetched and displayed in the table.
- 3) Information and matedata of each image can be viewed.
- 4) Select multiple images, click button “Extract”, and save the images in files.
- 5) Click right-top button “Edit” to open the interface of Edit Multiple Frames Image File.

MyBox Extract Image Frames D:\tmp\0\g.tif

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**Open** **Edit**

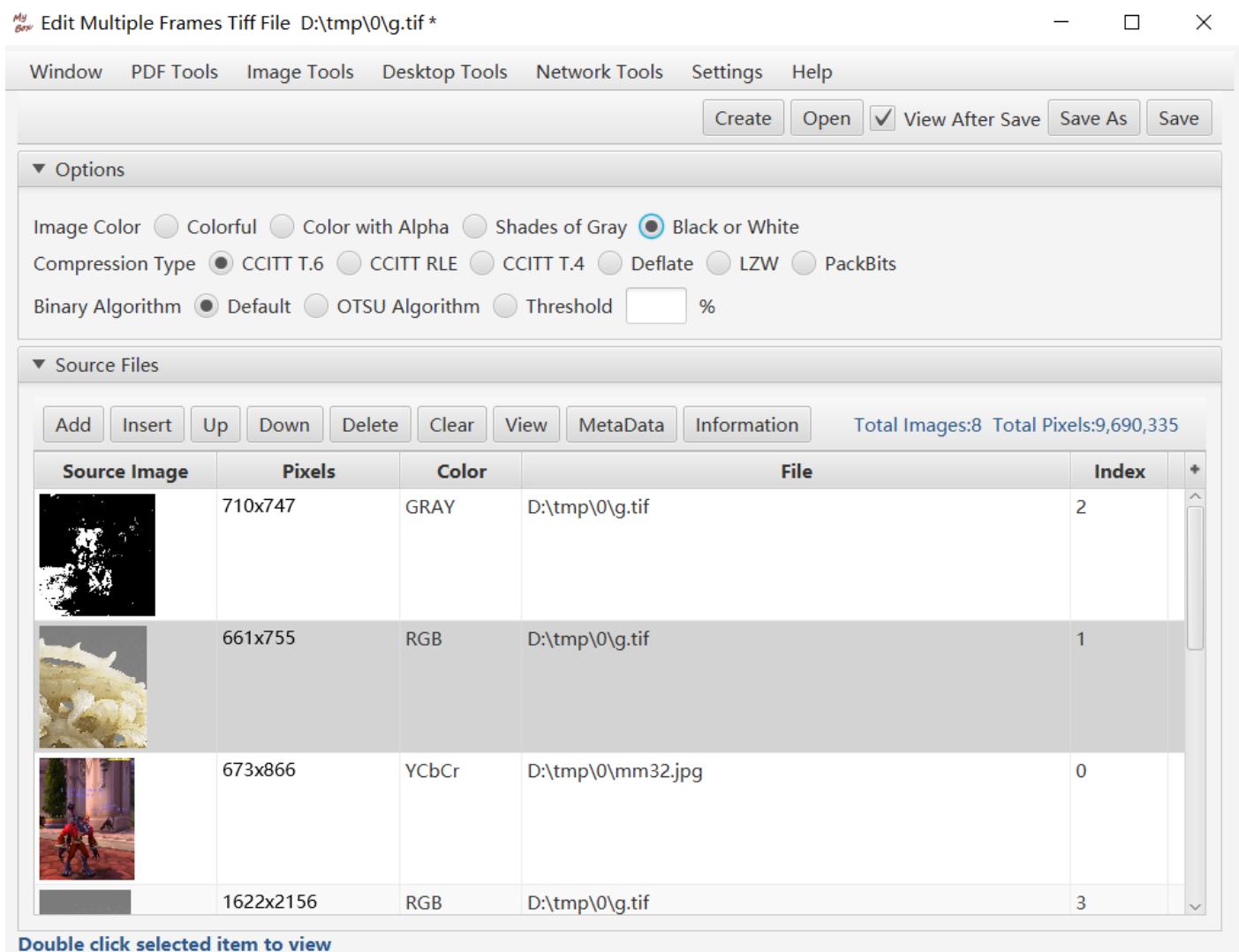
View MetaData Information Select All Unselect All **Extract** Total Images:6 Total Pixels:7,185,597

Source Image	Pixels	Color	File	Index	
	710x747	RGB	D:\tmp\0\g.tif	0	
	661x755	RGB	D:\tmp\0\g.tif	1	
	710x747	GRAY	D:\tmp\0\g.tif	2	
	1622x2156	RGB	D:\tmp\0\g.tif	3	
	1085x981	RGB	D:\tmp\0\g.tif	4	

Double click selected item to view

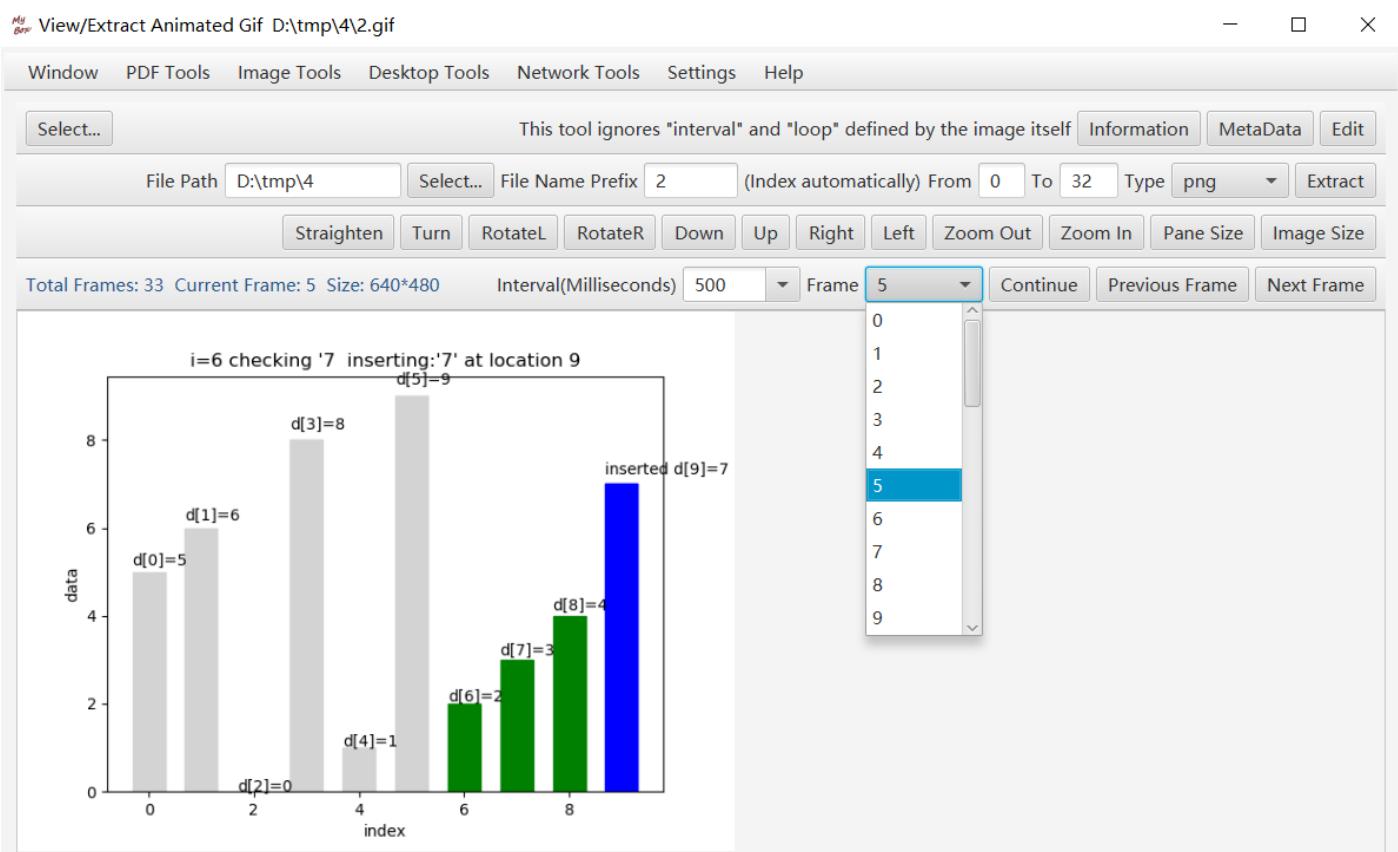
## 8.2 Create/Edit Multiple Frames Tiff File

- 1) Open existed multiple frames Tiff file, or create a new one.
- 2) Add/Insert images in any supported formats, including other multiple frames image file.
- 3) Adjust order of images.
- 4) View information and metadata of each image.
- 5) Set options of image color, compression type, and binary parameters.

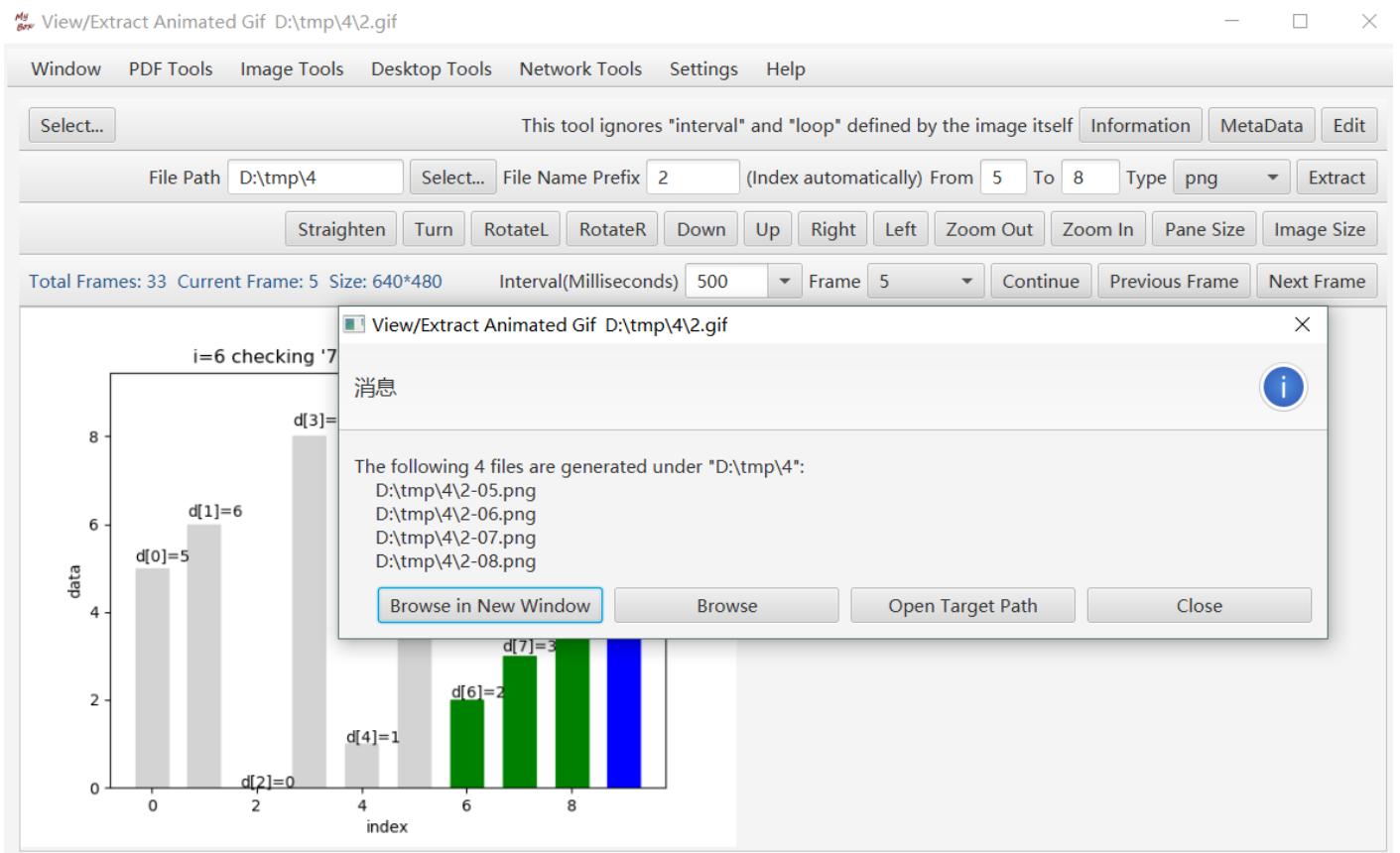


## 8.3 View/Extract Animated Gif

- 1) When an animated gif file is opened by this tool, its frames will be displayed as the user defined internal in loop. The definition of the gif is ignored.
- 2) The interval set by user will take effect at once.
- 3) Click button “Pause”/“Continue” to control the playing.
- 4) Select a frame number, then the loop will be stopped and the frame will be display. Click buttons “Next Frame” and “Previous Frame” to browse the frames one by one.
- 5) Input path, file prefix, start/end frame number, and file type, to extract frames of the source gif file as separated files of each frame.

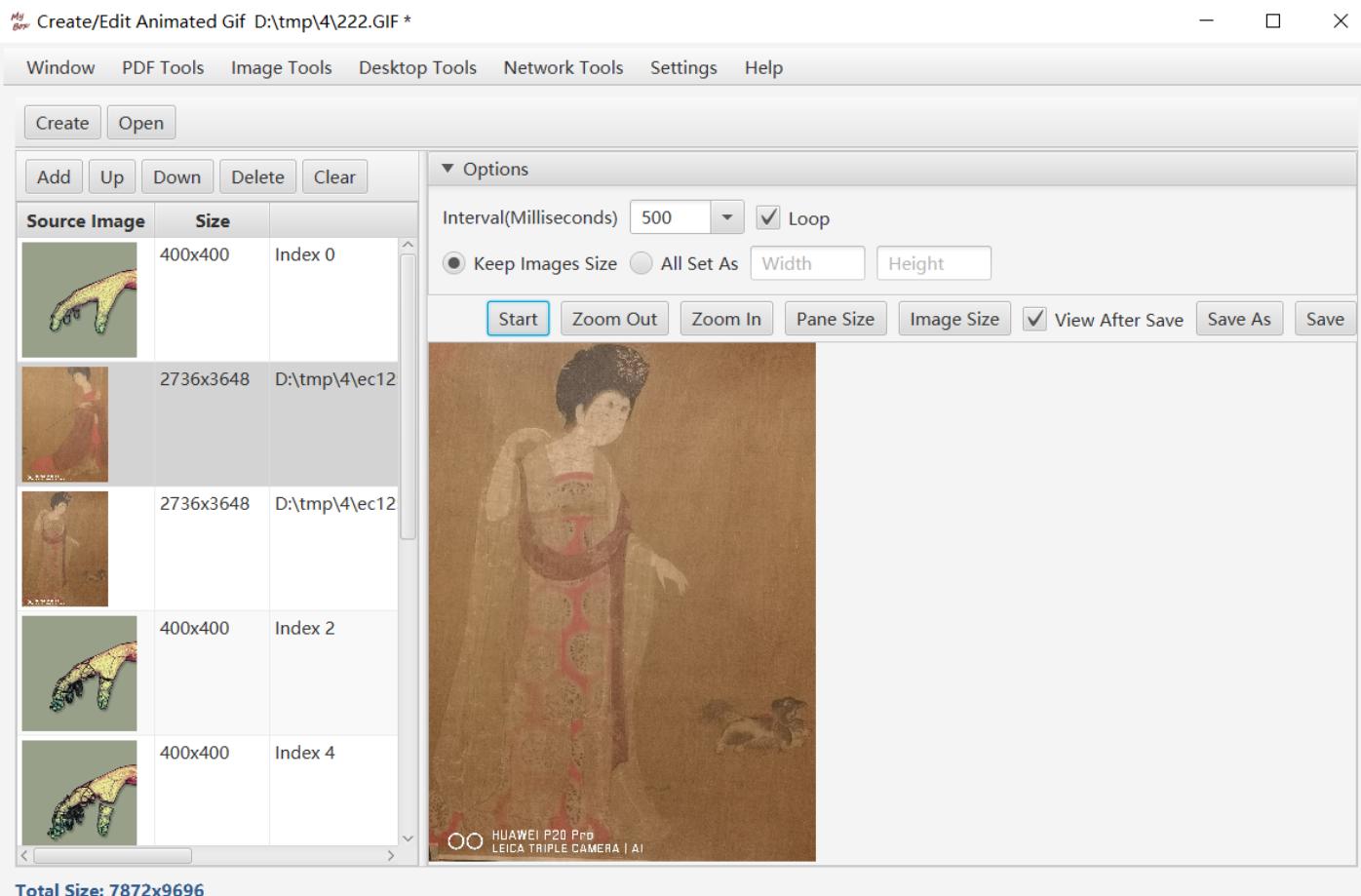


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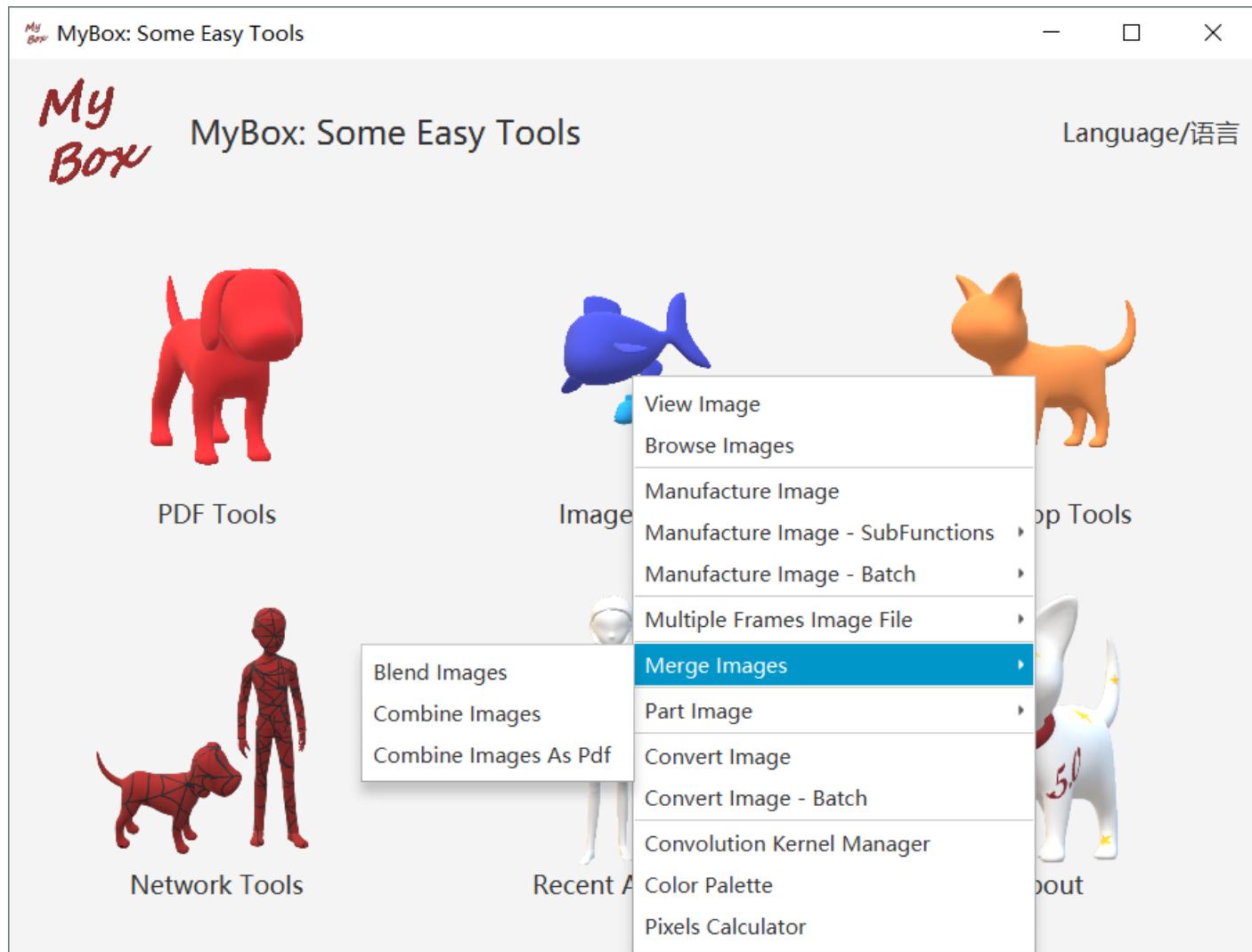
## 8.4 Create/Edit Animated Gif

- 1) Add/Delete/Clear images, and adjust their ordering.
- 2) Set the interval, whether loop, and select keeping images' size or setting as customized size.
- 3) Edit the existed animated gif file, and insert new images or delete images in it, or save it as new gif file to modify the new file.



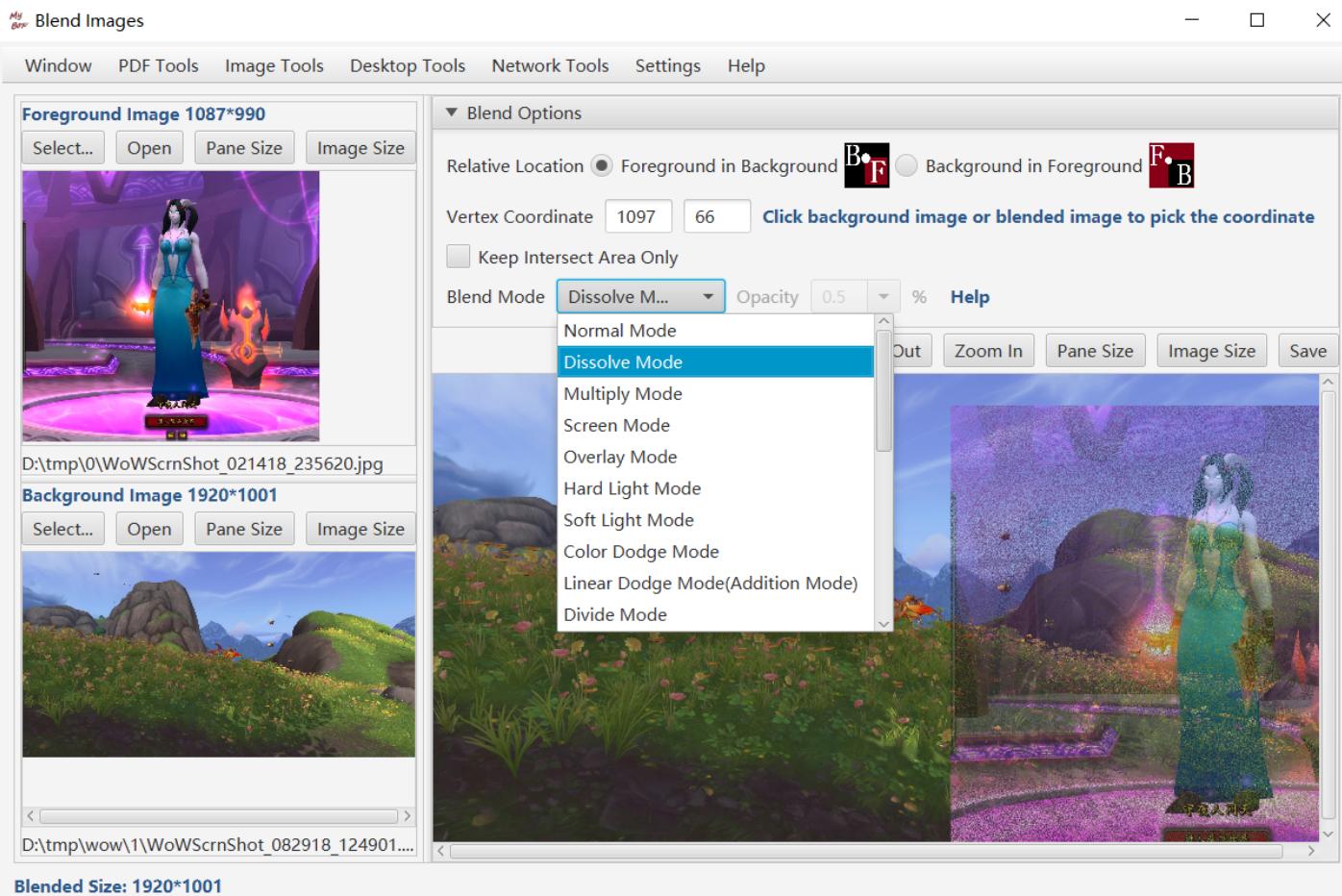
## 9 Merge Images

This category includes following tools: Blend Images, Combine Images, and Combine Images as PDF.



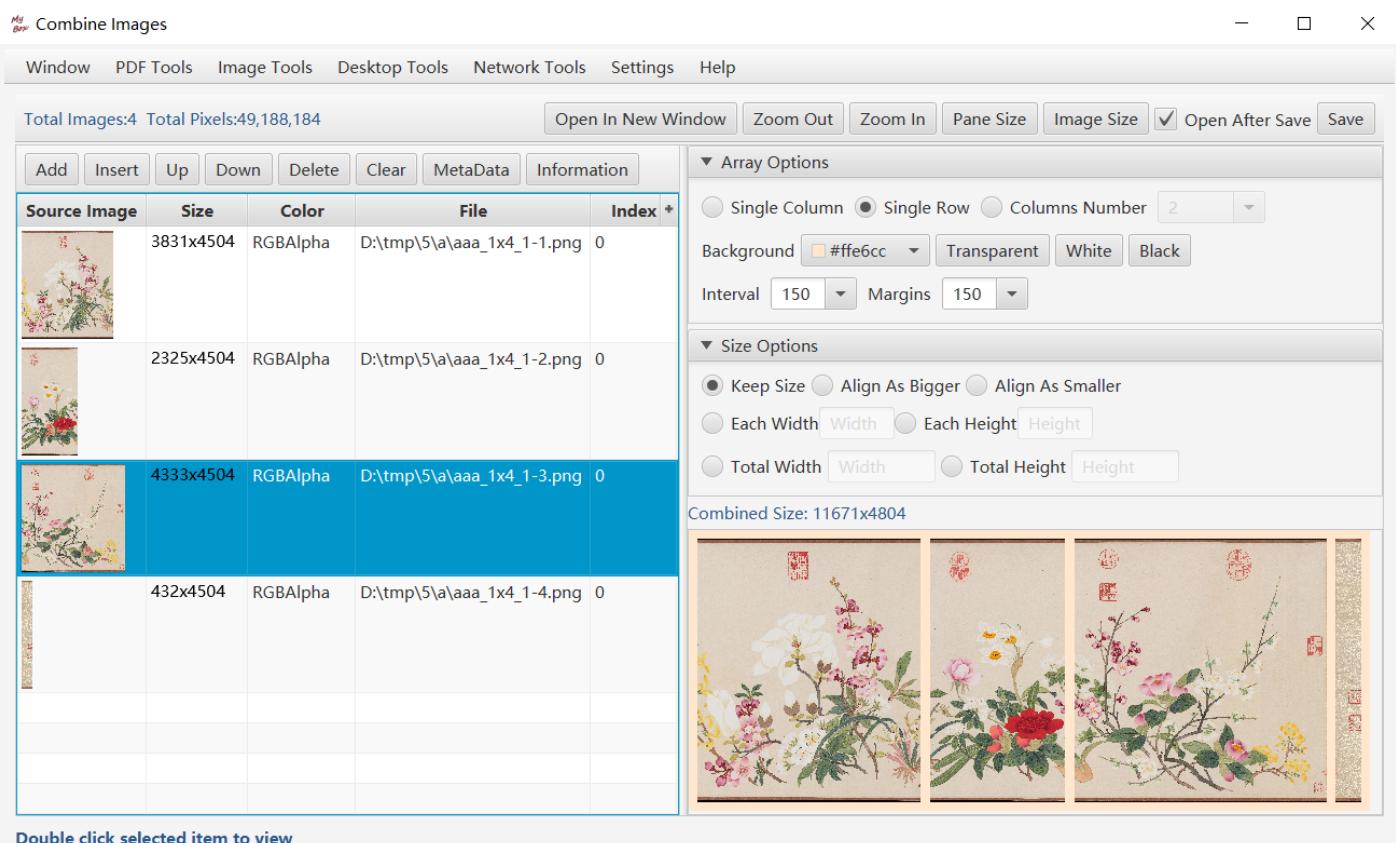
## 9.1 Blend Images

- 1) Blend two images into one image.
- 2) Define the relative location of foreground image and background image.
- 3) Define the intersect area by setting the left-top corner.
- 4) Set whether keep intersect area only.
- 5) Select the blending mode.



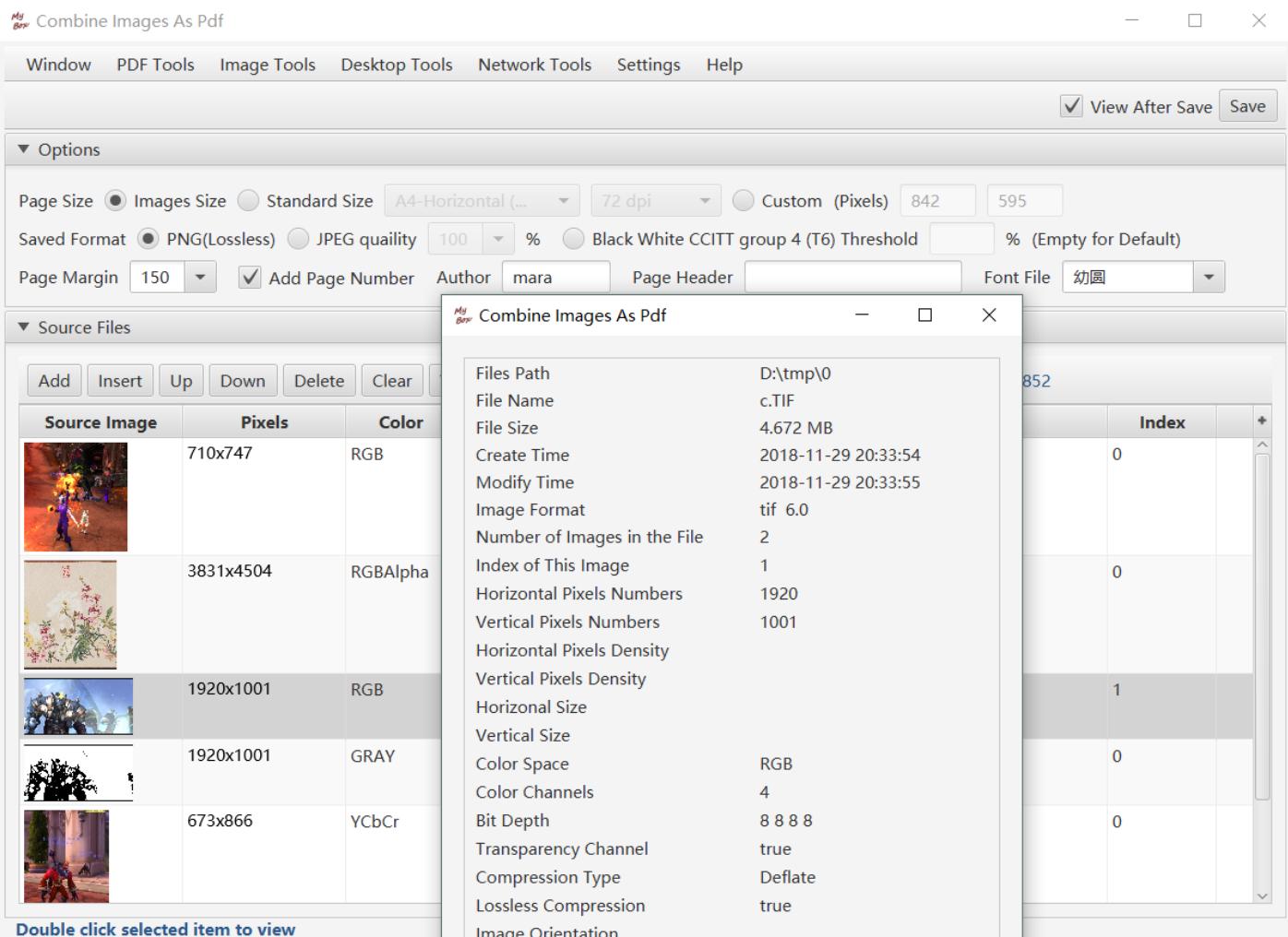
## 9.2 Combine Images

- 1) Manage the source files: add/delete/clear, and order them.
- 2) Combine multiple images into single image.
- 3) Array Options: single row/single column/defined columns number, background color, interval width, margins width.
- 4) Size options: keep size, align as smaller, align as bigger, set each width, set each height, set total width, or set total height.
- 5) Target file: path, prefix, format.
- 6) Preview the combined image in new window.



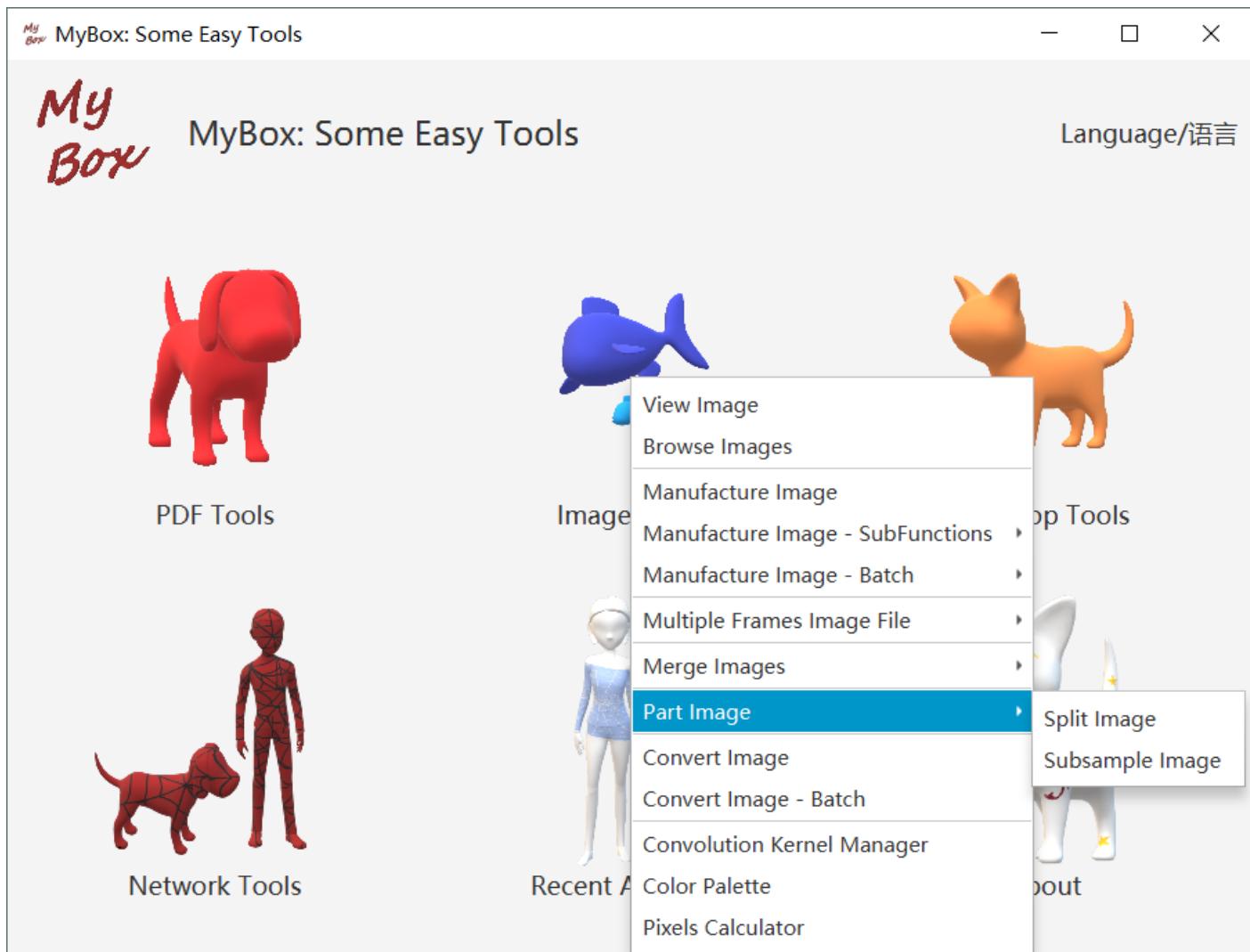
## 9.3 Combine Images As PDF

- 1) Add/Insert images in any supported formats, including multiple frames image file.
- 2) Adjust order of images.
- 3) View information and metadata of each image.
- 4) Set PDF options like: page size, images format, margin, author, header, font, etc.



## 10 Part Image

This category includes following tools: Split Image, and Subsample Image.



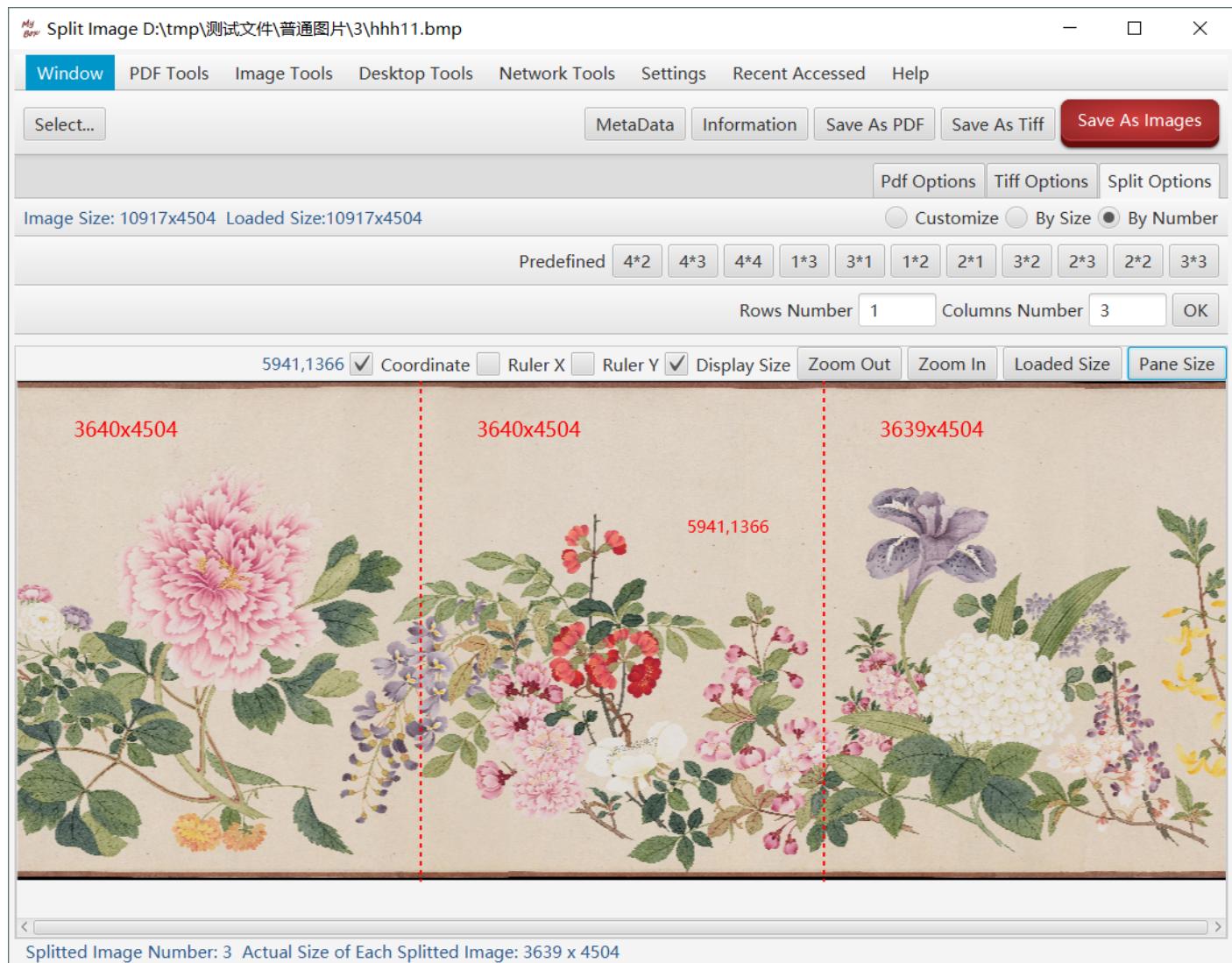
## 10.1 Split Image

### 10.1.1 Interface

- 1) After open the source file, information and metadata of the image can be viewed.
- 2) Zoom in/out, pane size, or image size.
- 3) Select the splitting way: By Number, By Size, or Customized.
- 4) Select whether show coordinate, rulers, and splitted size in the image.
- 5) Width and color of splitting line can be set in “Settings” function.

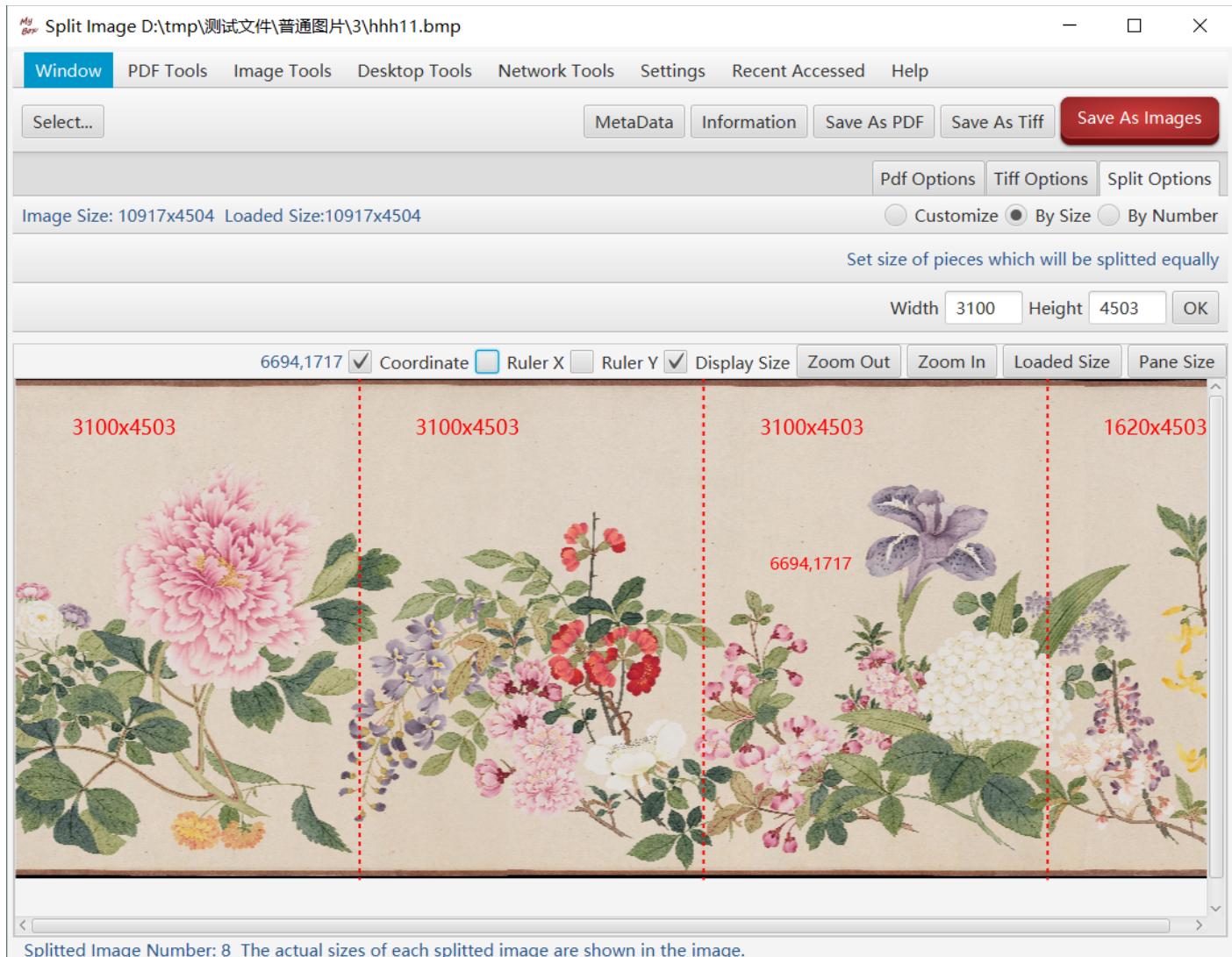
### 10.1.2 Split By Number

- 1) Click the buttons of predefined splitting schemas, and the splitting lines will be shown on the image.
- 2) Rows number and columns number can be input. Program will split the image automatically by the rows number and columns number.



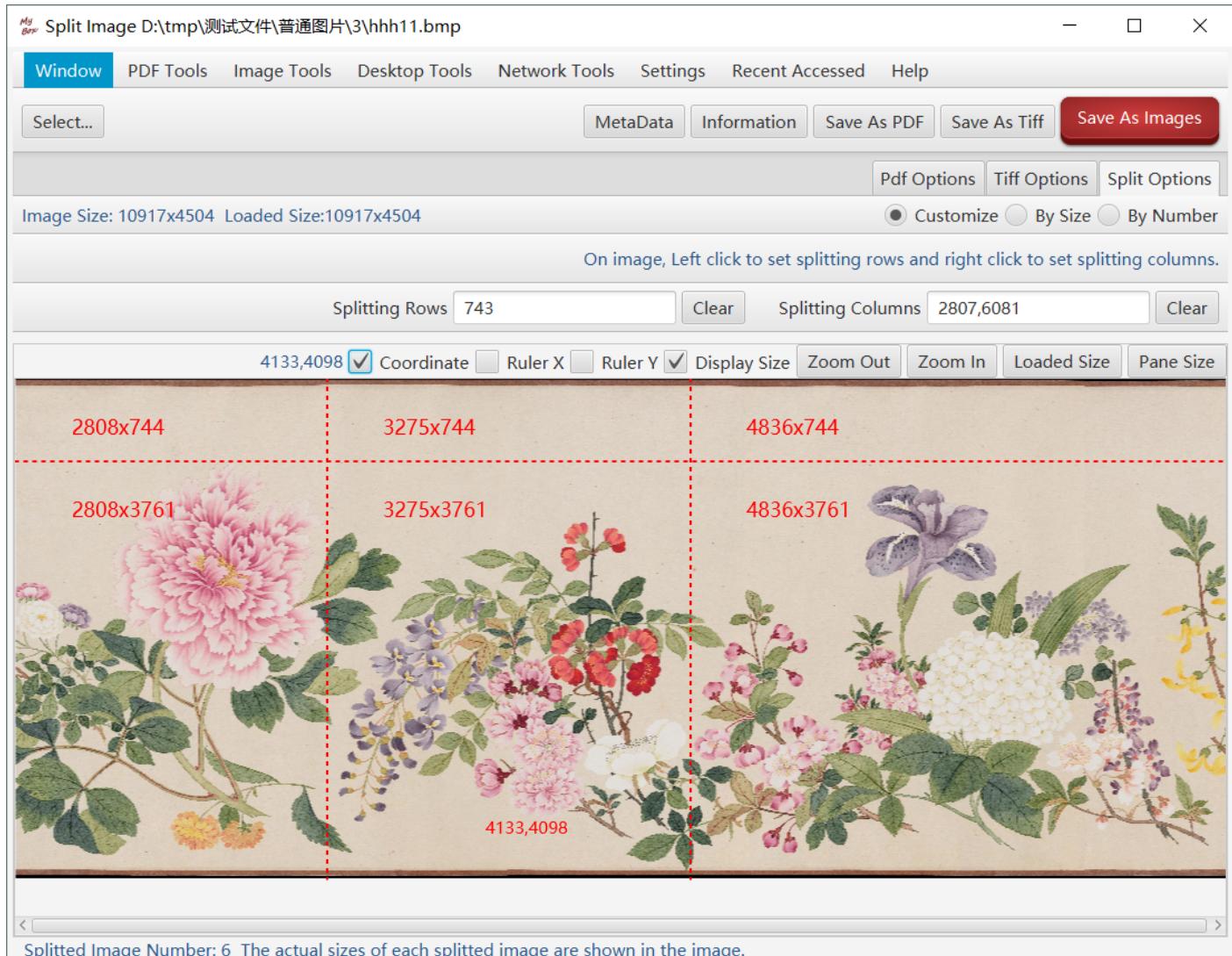
### 10.1.3 Split By Size

Width and height can be input. Program will split the image automatically by the size.



### 10.1.4 Customized Splitting

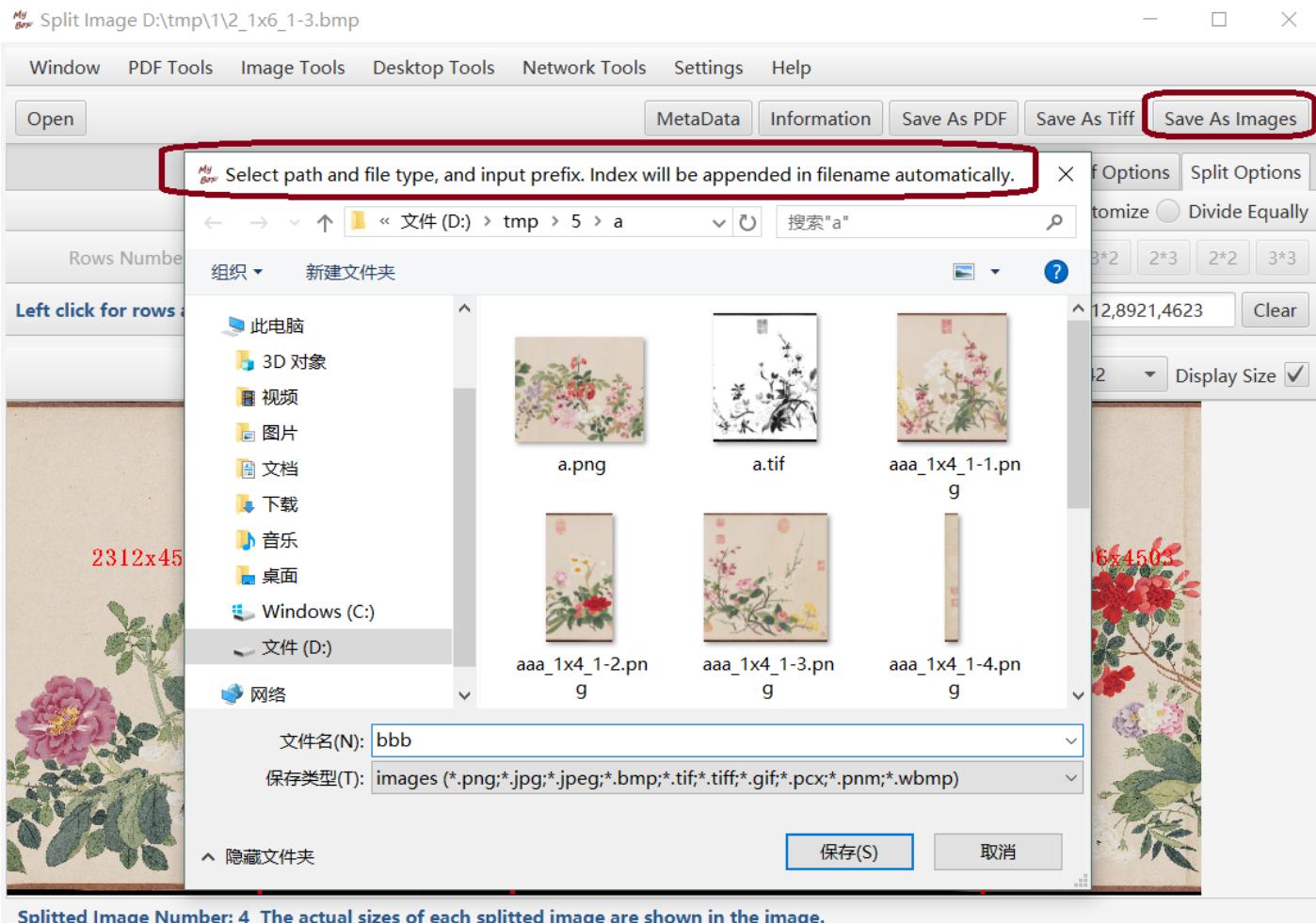
- 1) Left click image to set rows, and right click image to set columns. Program will input the values of rows and columns automatically.
- 2) Rows' positions and columns' positions can be input. The order is not cared.



## 10.1.5 Save As Image Files

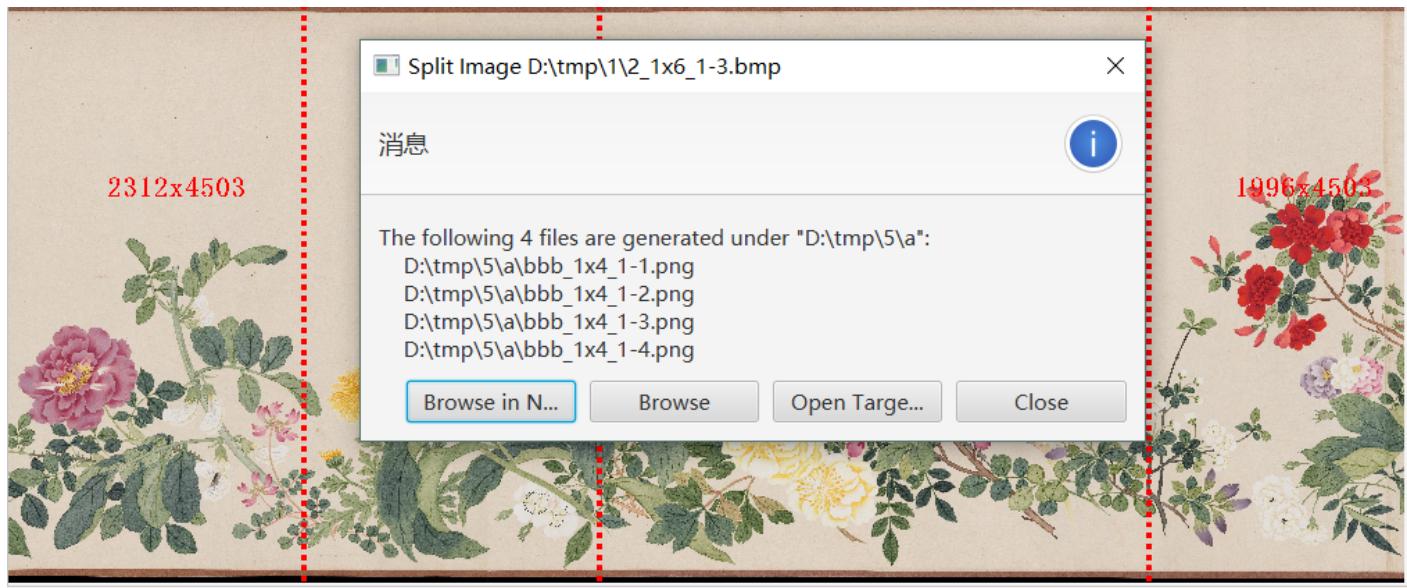
Click button “Save As Images”:

- 1) Select directory, input file name's prefix, and choice image file type:

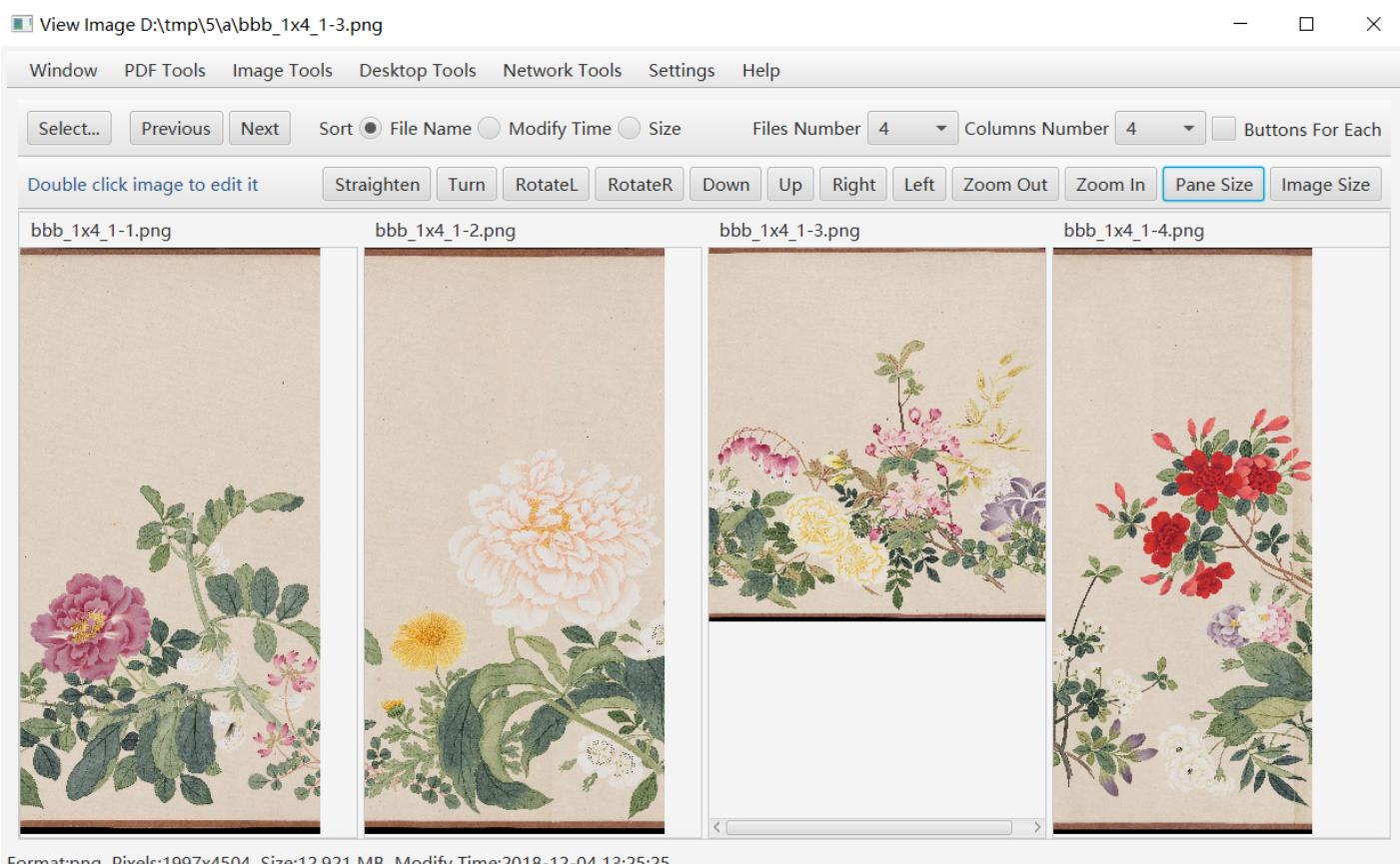


- 2) Tool splits the image as options and save as the target files.
- 3) A prompt window will be popped to have user to choice:
  - (1) Browse the splitted files in new window.
  - (2) Browse the splitted files in current window.
  - (3) Open the target path.
  - (4) Do nothing, and keep current window.

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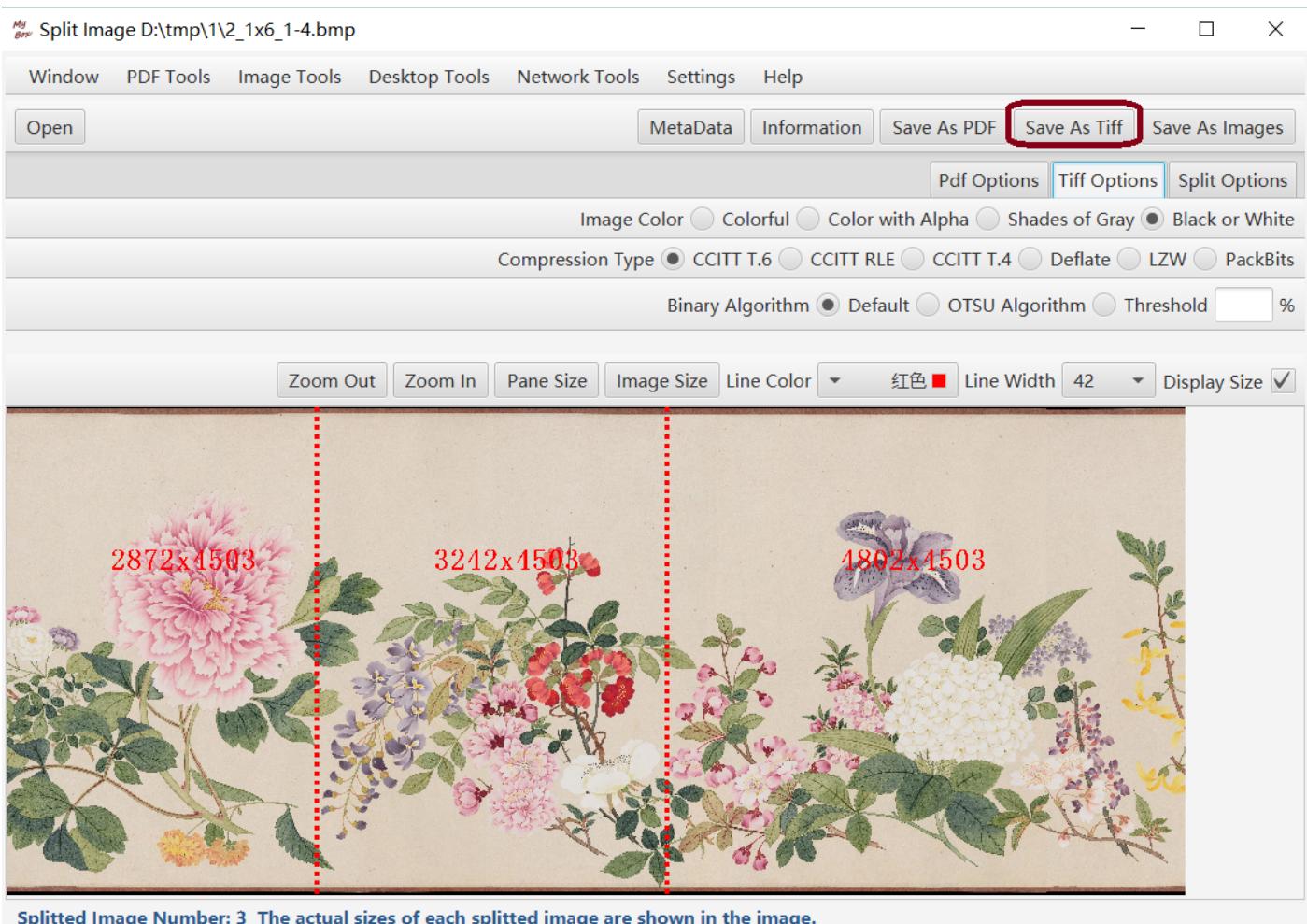


**Split Image Number: 4 The actual sizes of each splitted image are shown in the image.**



### 10.1.6 Save As Multiple Frames Tiff File

- 1) Under tab “Tiff Options”, set the options for target tiff file, including color space, compression type, and binray algorithm.
- 2) Click button “Save As Tiff”.
- 3) Select directory and input name of the target file.
- 4) Tool spits the image and write the tiff file as options.
- 5) After file saved, the interface of multiple frames image file viewer is popped to display the generated file.



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Extract Image Frames D:\tmp\5\a\b.tif

Window PDF Tools Image Tools Desktop Tools Network Tools Settings Help

Open Edit

View MetaData Information Select All Unselect All Extract Total Images:3 Total Pixels:49,179,176

Source Image	Pixels	Color	File	Index
	2873x4504	GRAY	D:\tmp\5\a\b.tif	0
	3243x4504	GRAY	D:\tmp\5\a\b.tif	1
	4803x4504	GRAY	D:\tmp\5\a\b.tif	2

Double click selected item to view

View Image D:\tmp\5\a\b.tif - Image 2

Window PDF Tools Image Tools Desktop Tools Network Tools Settings Help

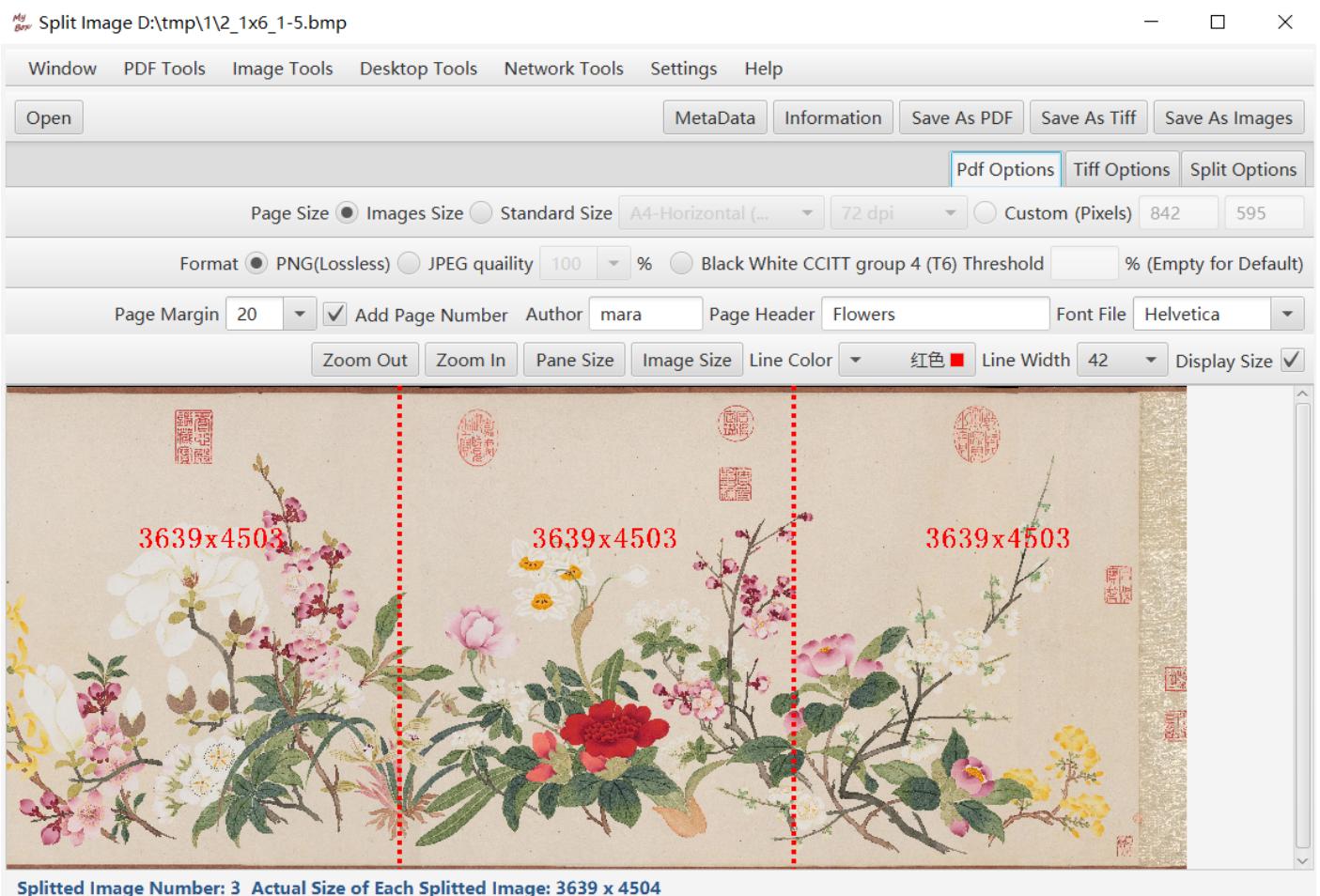
Select... Sort  File Name  Modify Time  Size Previous Next

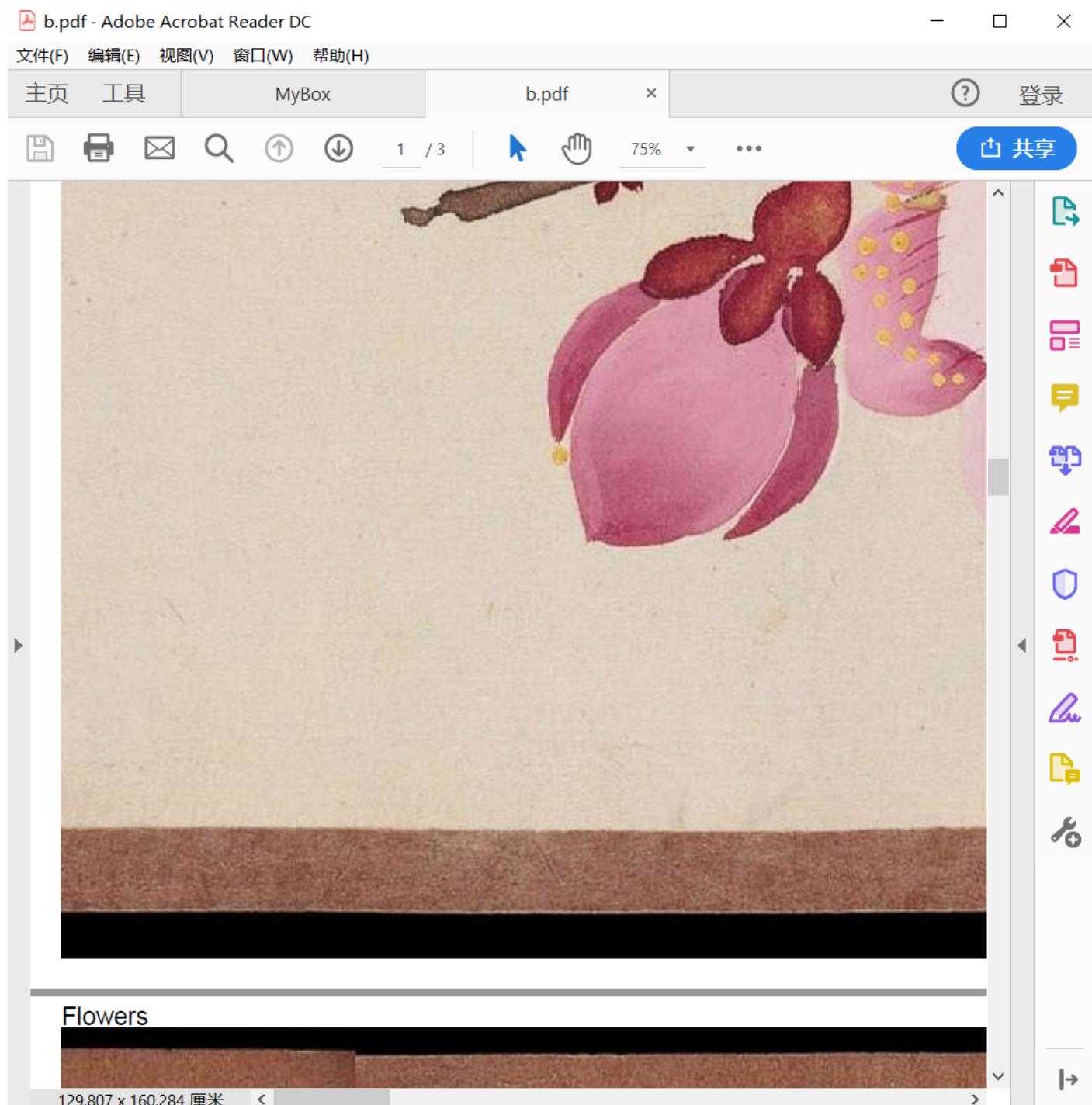
Straighten Turn RotateL RotateR Down

File Path D:\tmp\5\a\b.tif  
 File Name b.tif  
 File Size 1.404 MB  
 Create Time 2018-12-04 13:34:58  
 Modify Time 2018-12-04 13:35:00  
 Image Format tif 6.0  
 Number of Images in the File 3  
 Index of This Image 2  
 Horizontal Pixels Numbers 4803  
 Vertical Pixels Numbers 4504  
 Horizontal Pixels Density  
 Vertical Pixels Density  
 Horizontal Size  
 Vertical Size  
 Color Space GRAY  
 Color Channels 1  
 Bit Depth 1  
 Transparency Channel false  
 Compression Type CCITT T.6  
 Lossless Compression true  
 Image Orientation

### 10.1.7 Save As PDF File

- 1) Under tab “Pdf Options”, set values of page size, image format, margins, author, header, font etc.
- 2) Click button “Save As PDF”.
- 3) Select directory and input name of target files.
- 4) Tool splits the image and write the PDF file as options.
- 5) After file saved, the PDF is opened automatically.



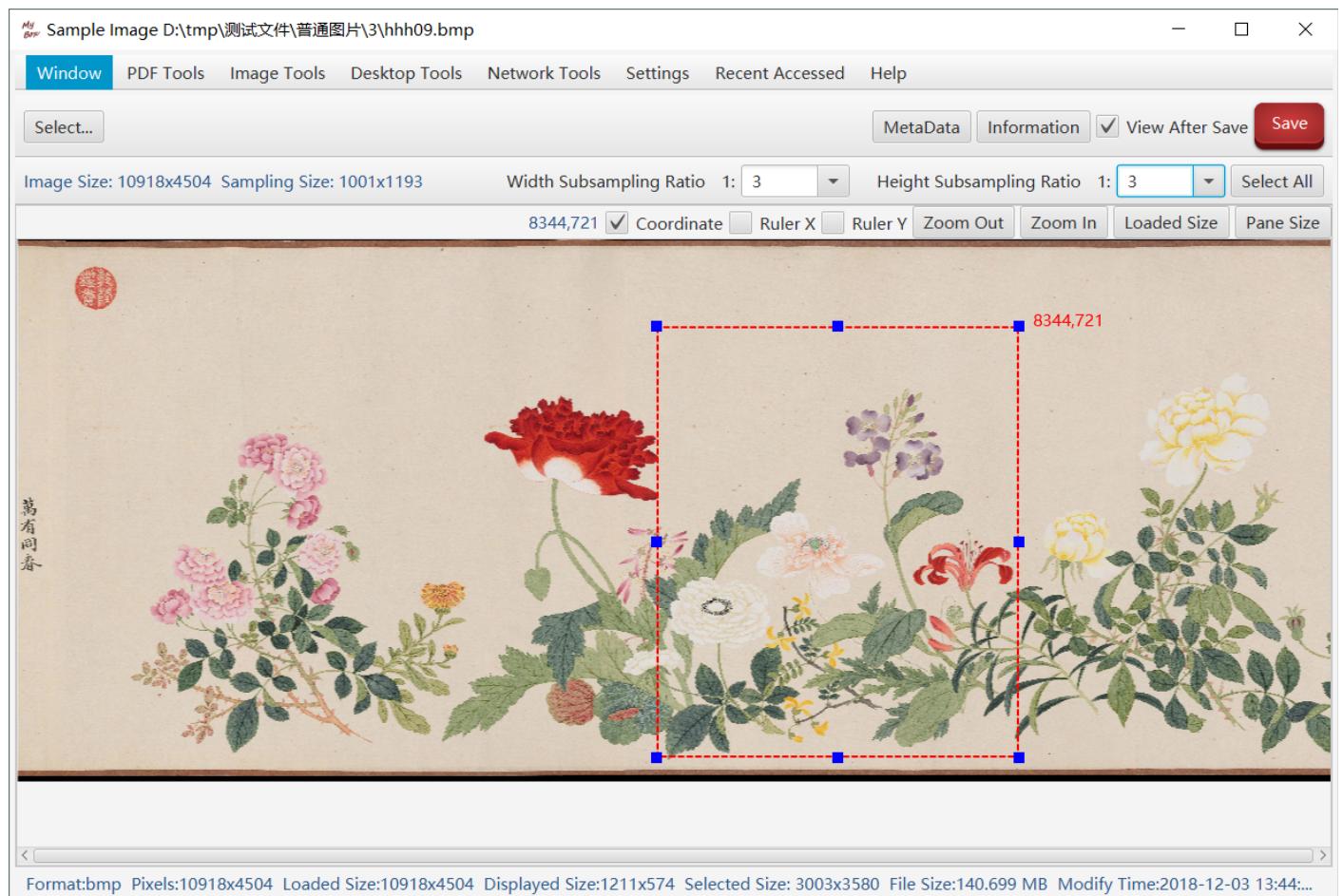


## 10.2 Subsample Image

Subsampling is mainly used to handle big image. When sample ratio is 1, it acts same as “Crop Image”.

The difference between subsampling and functions “Crop”/“Size” of tool “Image Manufacture” is that subsampling only reads required part of data and writes while reading and avoid out of memory when handle big image. For small image, subsampling does same things as tool “Image Manufacture”, that they both read all data and do operations in memory.

- 1) Set sample regions: Drag anchors of dotted rectangle line to adjust the area; or double left click to set left-top, and double right click to set right-bottom.
- 2) Set sample ratio of width and height.
- 3) The calculated size of sampled image is shown on the left-top corner of image.
- 4) Click button “Save” to write the sampled image file.
- 5) After file saved, it is opened in interface of image viewer if “View After Save” is checked.



## 11 Big Image

Big image is that includes too many pixels to be loaded and displayed under limitation of available memory.

For all operations which use image file as input, big image should be concerned.

### 11.1 The principles of handling big images by MyBox

The principles of handling big images by MyBox are following:

- 1) Evaluate the required memory for whole image, and judge whether load all data in memory. (About 5 times of pixels data plus 200M)
- 2) If enough memory is available to load whole image, read all data for next operations. Try best to operate in memory and avoid file I/O.
- 3) If memory may be out, subsample the image for next operations.
- 4) The sample ratio is determined by following rule: Make sure the sampled image is good enough while the sampled data occupy limited memory.
- 5) The sampled image is mainly to display the image, and not suitable for operations against whole image and images merging.
- 6) Some operations, like splitting and subsampling, can be handled by reading part of image data and writing-while-reading, so they are suitable for big images.
- 7) Image which can not be loaded wholly may be suitable to be handled batchly. Example, an image of 500M pixels can not be displayed under limitation of 1.8G, thus can not be cropped, zoomed, or color-adjusted interactively. But when crop, zoom, or color-adjust the image in batch way, the operations may be successfully under same memory limitation, since the data need not transferred as interface pixels.

Continually handling images may affect memory usage. Example, memory occupied by previous operation has not been collected by GC and then less memory can be required by current operation. So it is better to restart MyBox to handle big image because it can occupy most of available memory.

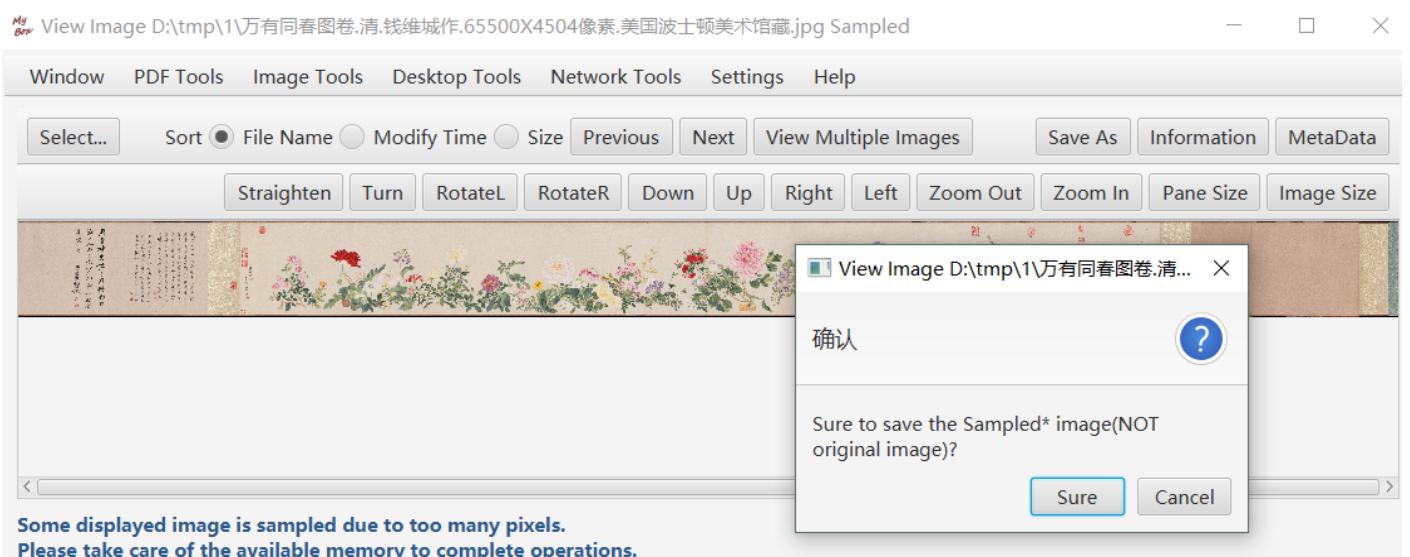
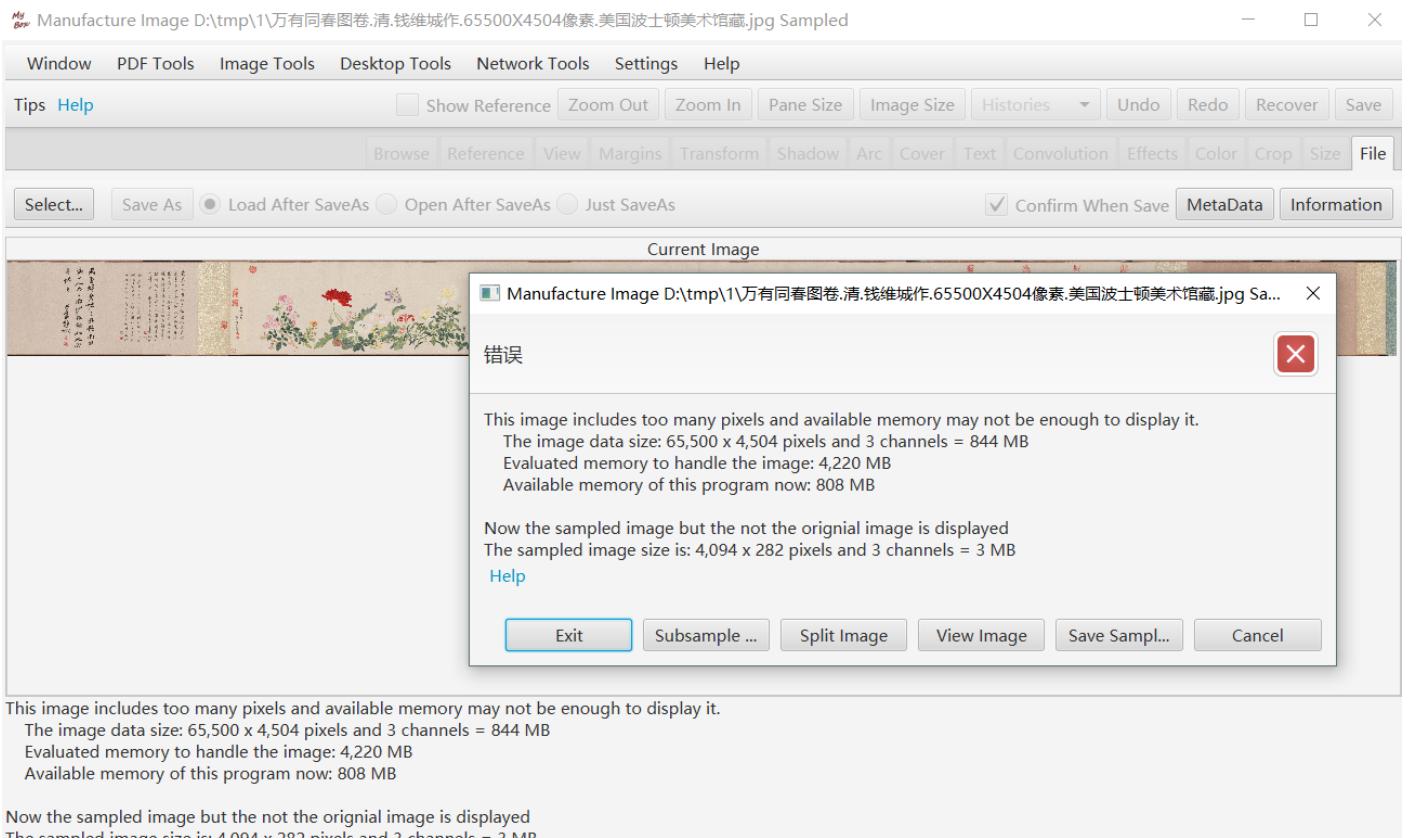
In order to handle big image interactively, user can extend the maximum memory for JVM.

### 11.2 To Operations Not Suitable For Big Image

When MyBox concludes that OutOfMemory would happen while loading the image, it does following:

- 1) Subsample the image and display it. The maximum width of sampled image for displaying can be set by user.
- 2) Show data about subsampling.
- 3) Prompt the choices of next step.

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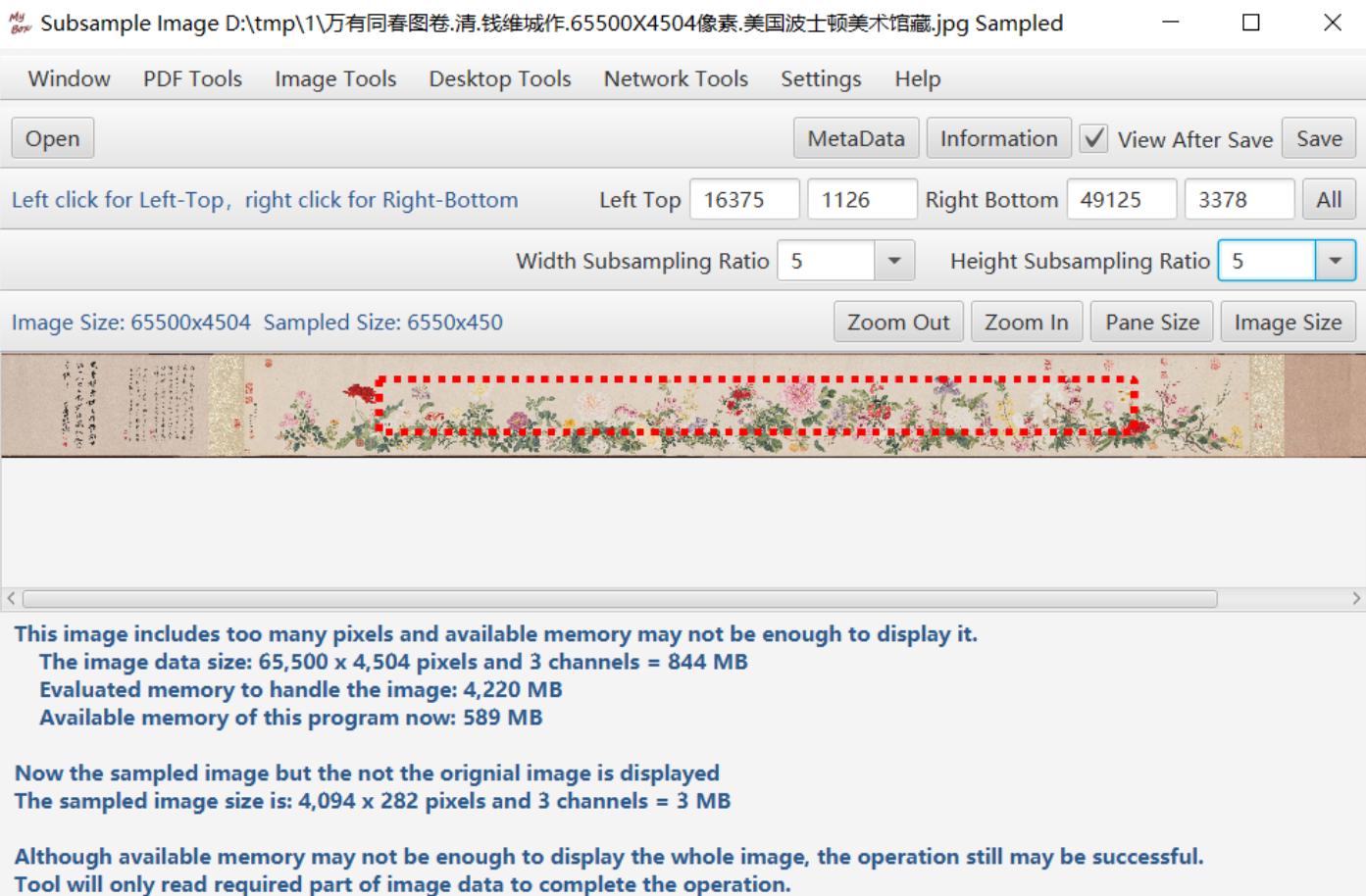
## 11.3 Split Big Image

Splitted images can be saved as image files, multiple frames Tiff file, or PDF file.



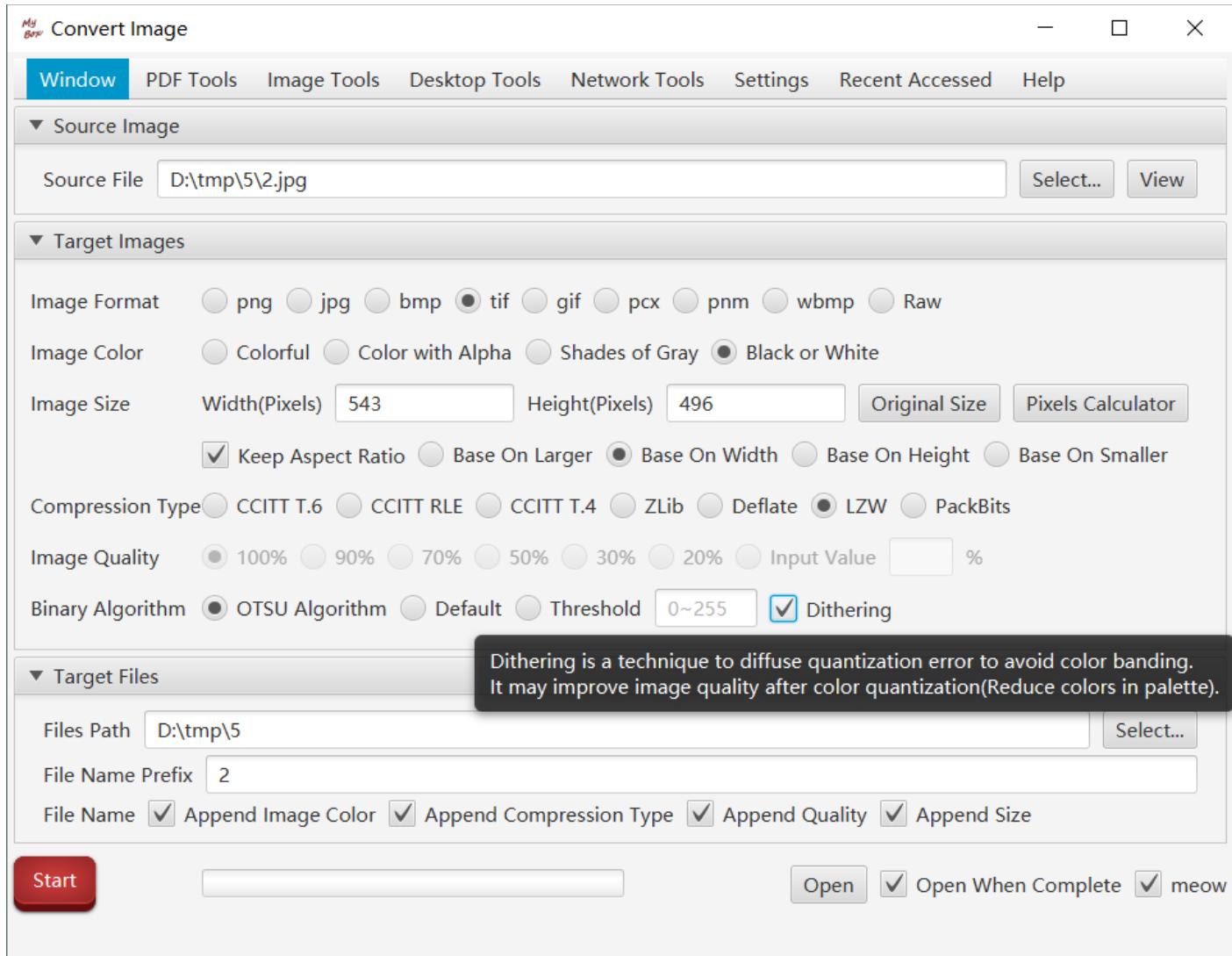
## 11.4 Subsample/Crop Big Image

When sample ratio is 1 and sample region is set, subsmapling is same as cropping.



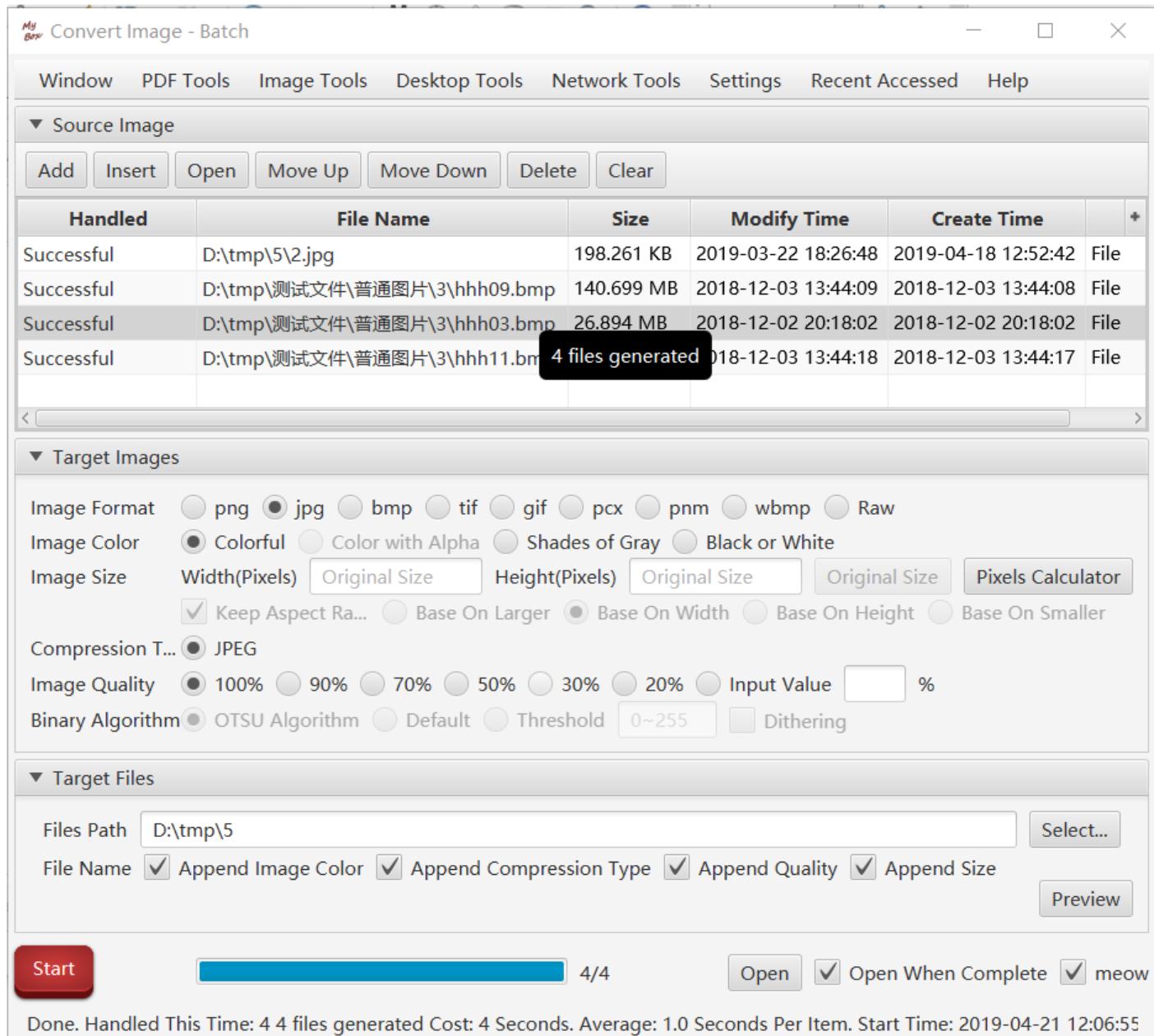
## 12 Convert Image

Convert image to other format, with parameters.



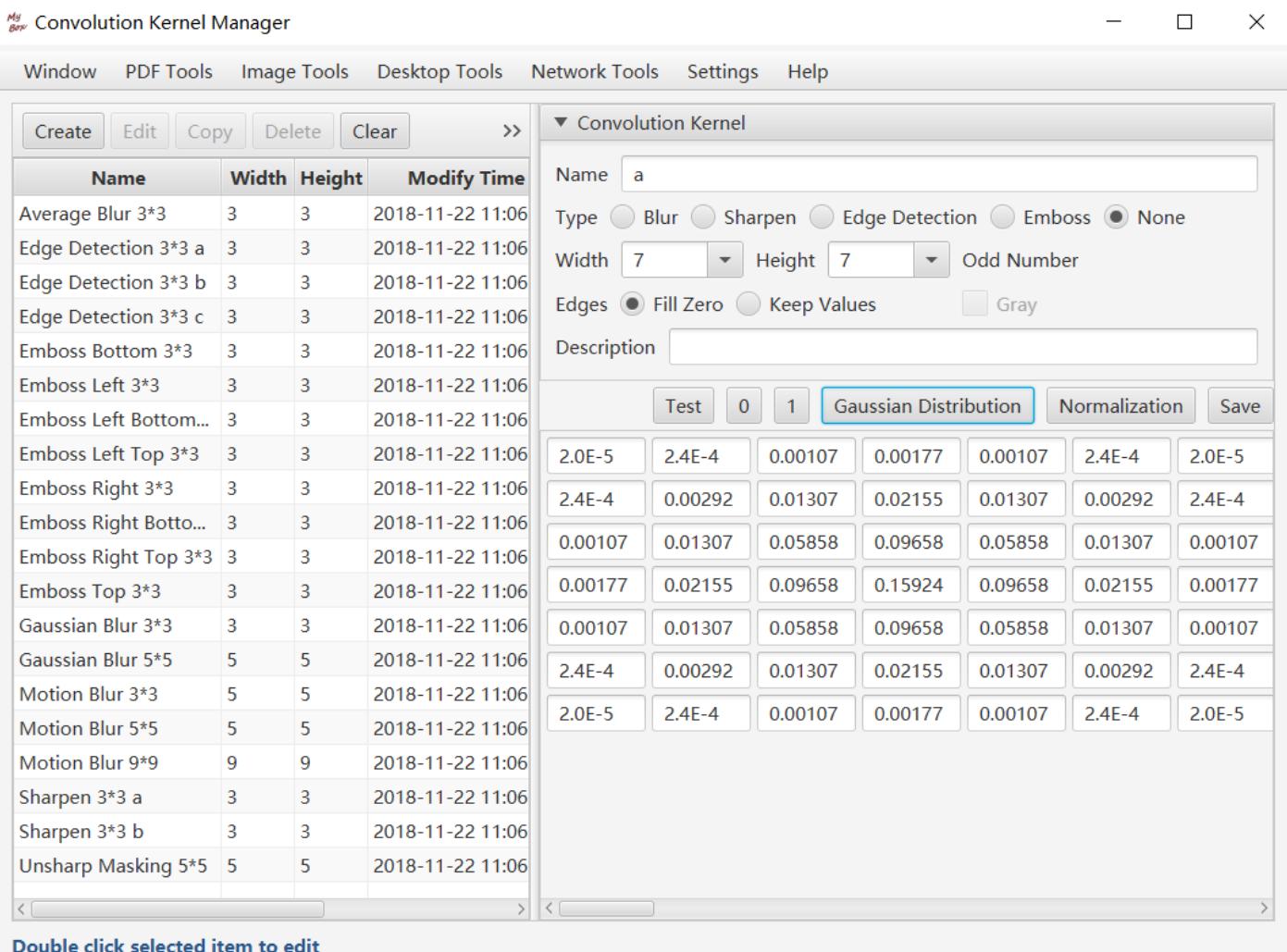
## 13 Convert Image in Batch

Convert multiple images in batch.



## 14 Convolution Kernels Manager

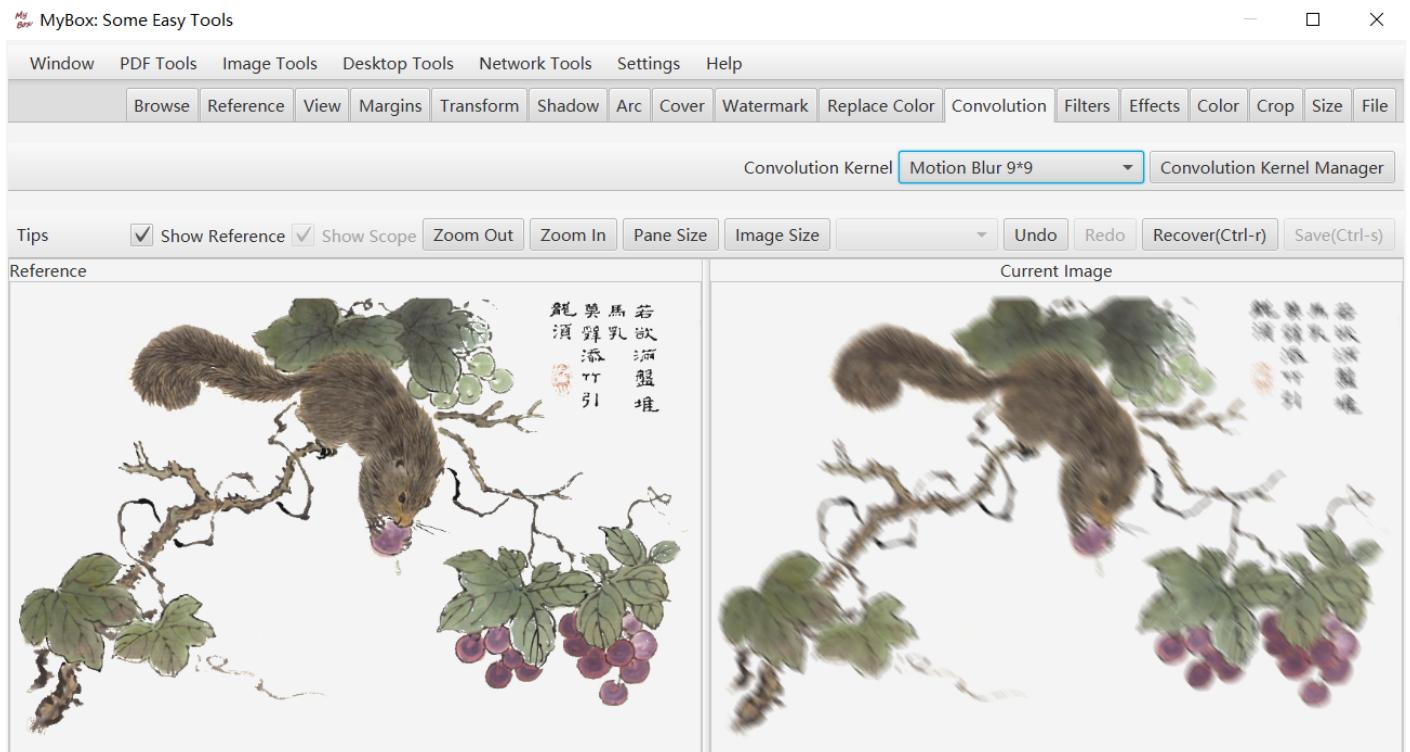
- 1) Create/Edit/Copy/Delete the convolution kernels for image manufacture.
- 2) Double click the selected item to edit it.
- 3) The definition of convolution kernel includes:
  - (1) Name. This is the primary key of convolution kernel
  - (2) Type. Can be Blur, Sharpen, Edge Detection, Emboss, and None.
  - (3) Width and height. They must be odd number and larger than 2.(2n+1)
  - (4) Gray. Only valid for Emboss type.
  - (5) How to handle pixels in edges: Fill zero, or Keep value.
  - (6) Description.



- 4) Click button “Examples” to create some famous kernels automatically,
- 5) Click button “Normalization” to recalculate the matrix values automatically. (Sum should be 1)
- 6) Click button “Gaussian Distribution” to fill in values of normal distribution automatically.
- 7) Click button “1” or “0” to fill in zeros or ones automatically.

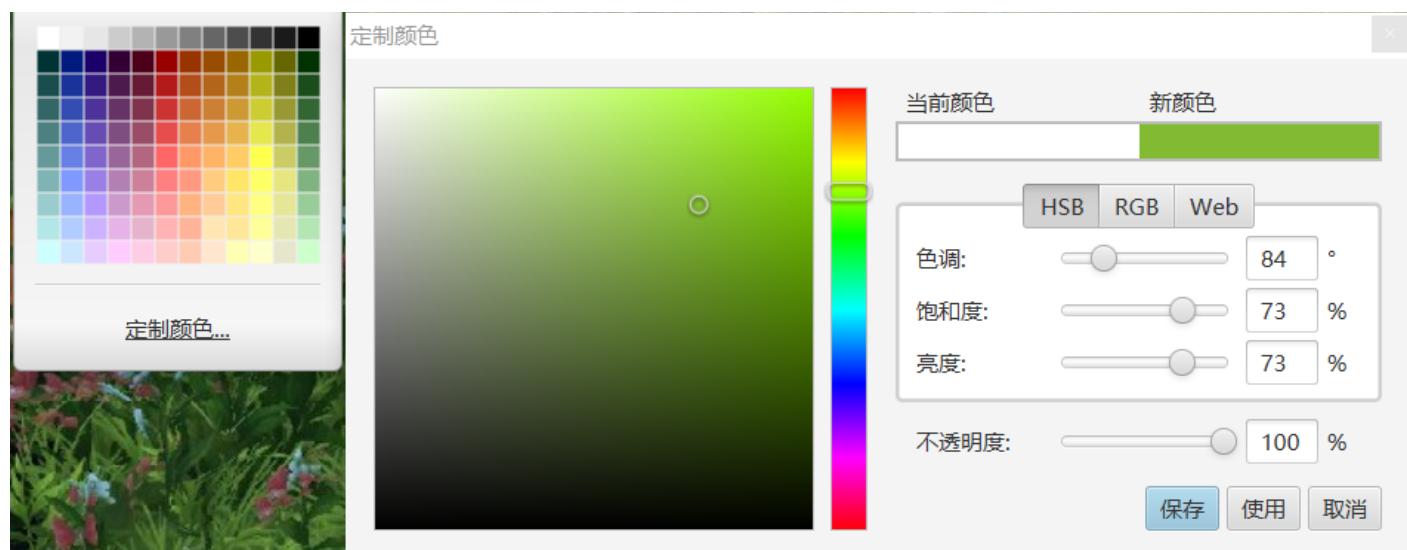
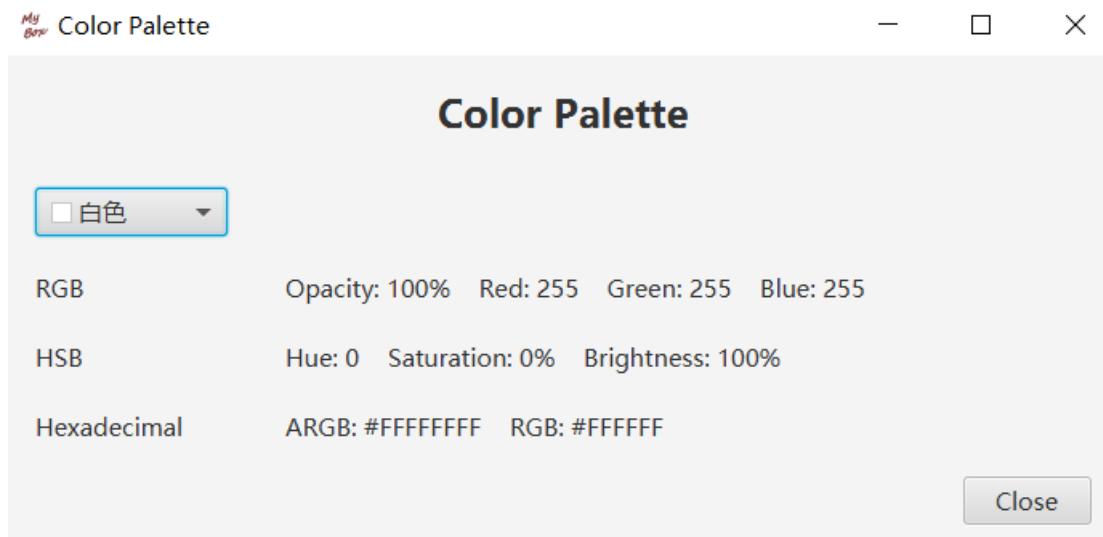
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- 8) Click button “Test” to open Image Manufacture interface to show the effect of applying this kernel upon an internal picture.



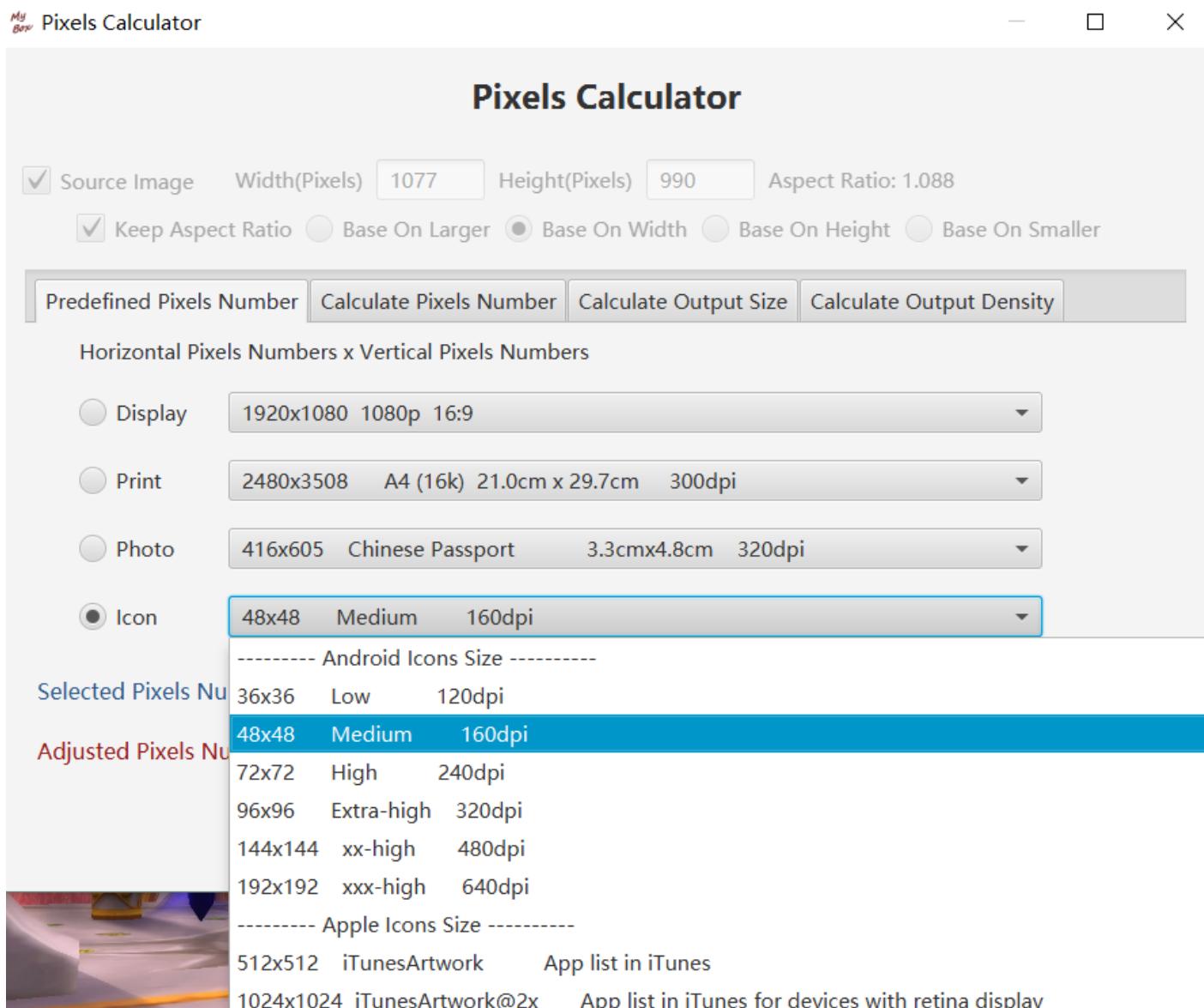
## 15 Color Palette

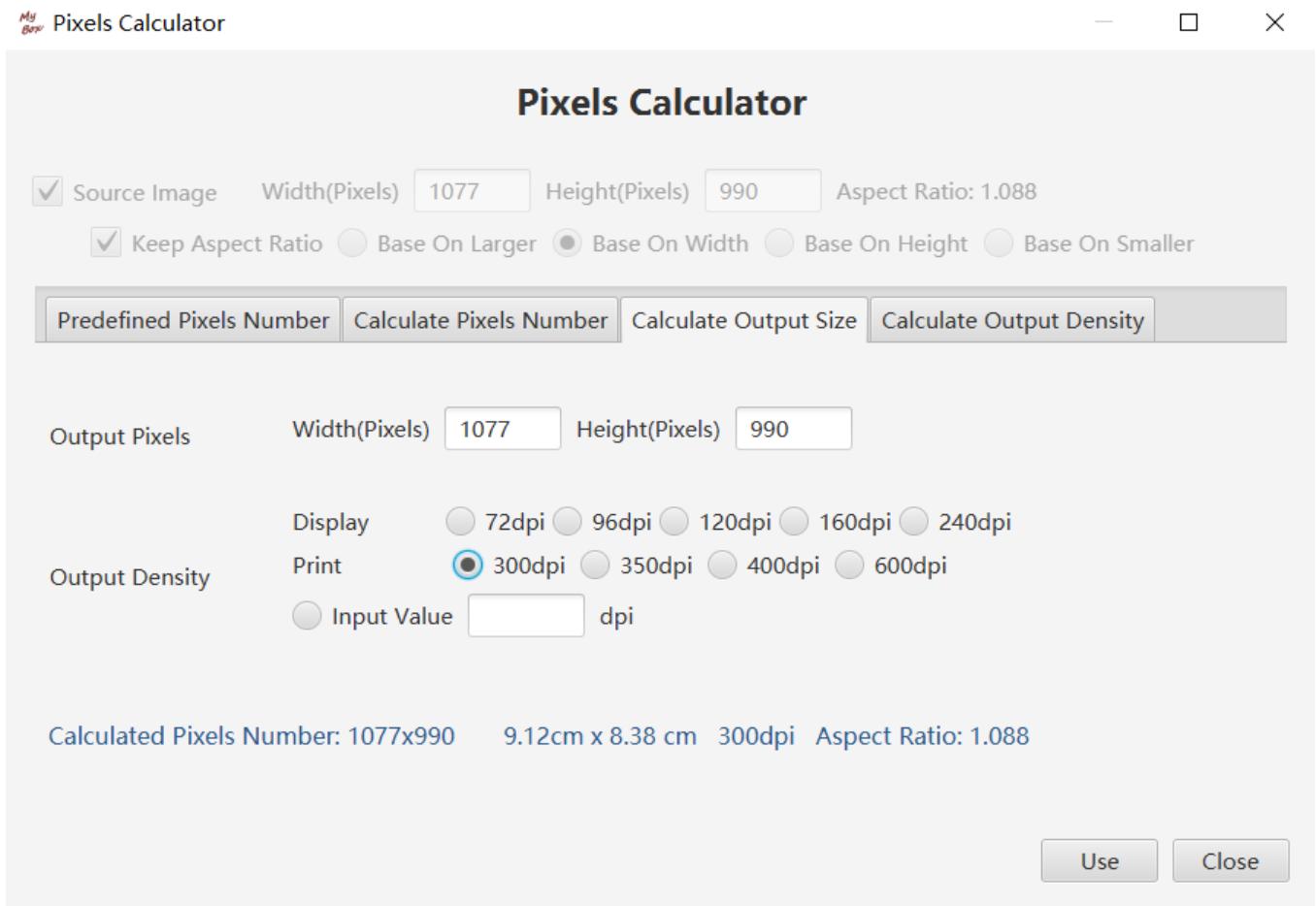
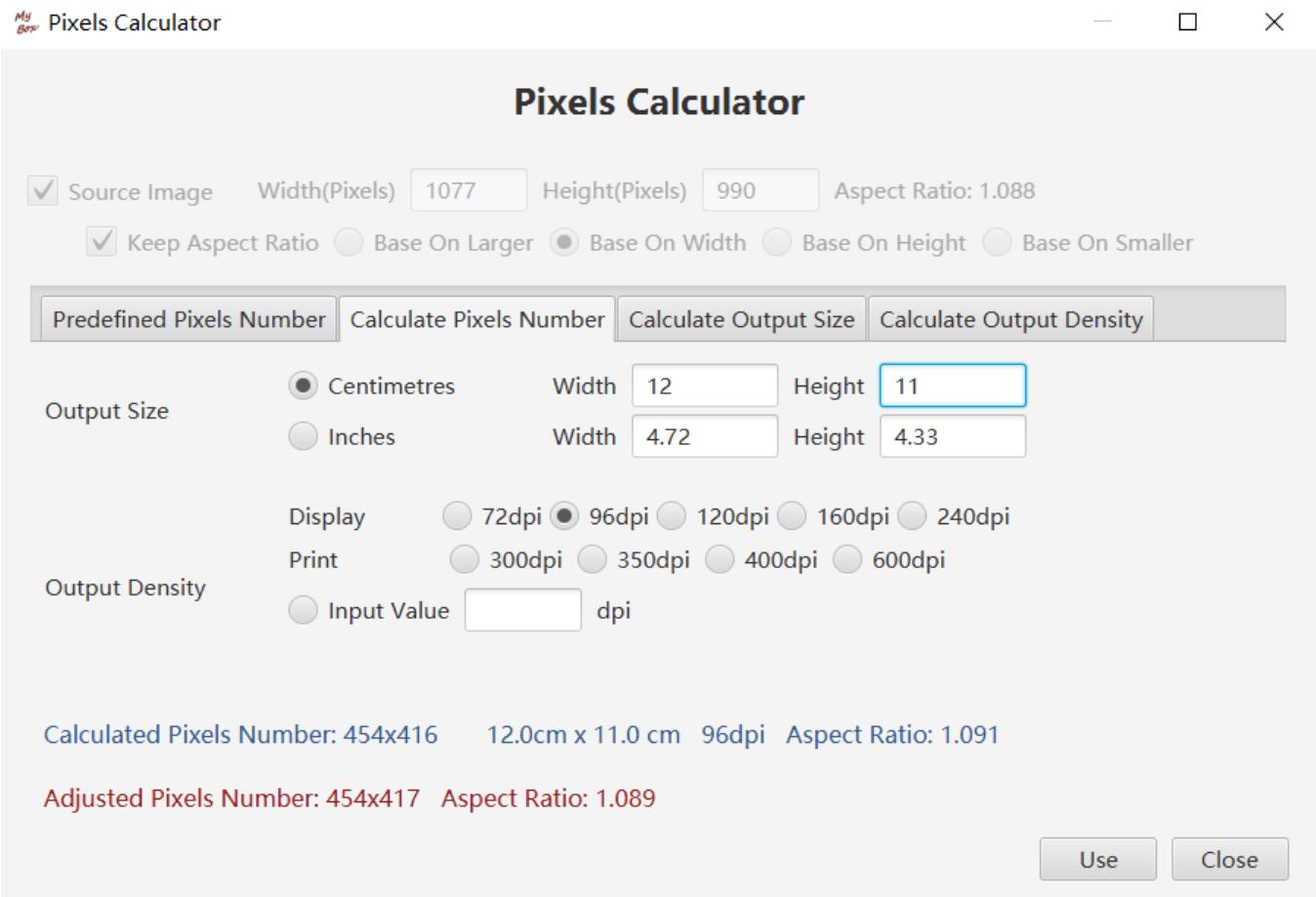
Check color value by color palette.



## 16 Pixels Calculator

Scale pixels with pixels calculator.





**<End of Document>**