تحلیل هوشمند تصاویر پزشکی

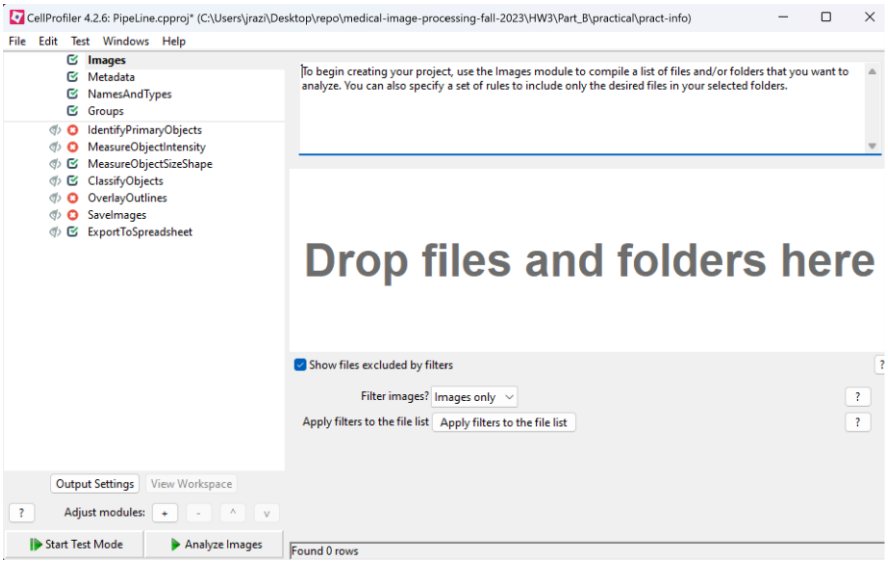
تمرین سوم، بخش دوم، گزارش بخش عملی

جواد راضی (٤٠١٢٠٤٣٥٤)

- **پایپ‌لاین اصلاح‌شده با عنوان FixedPipeline اکسپورت‌گردیده و به همراه پایپ‌لاین اوریجینال ضمیمه تمرین شده‌اند.**
- **فایل پروژه نیز همراه تمرین آپلود شده.**
- **تمام خروجی‌های هر استیج پایپ‌لاین، در دایرکتوری pipeline_outputs ذخیره شده‌اند.**

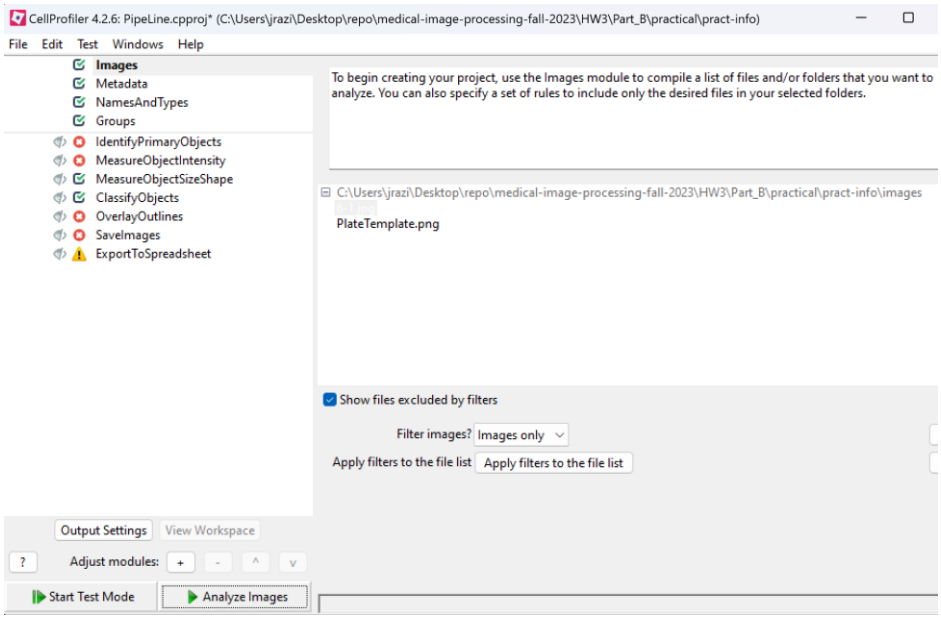
(۱

لود پایپ‌لاین:



(۲

لود تصاویر:

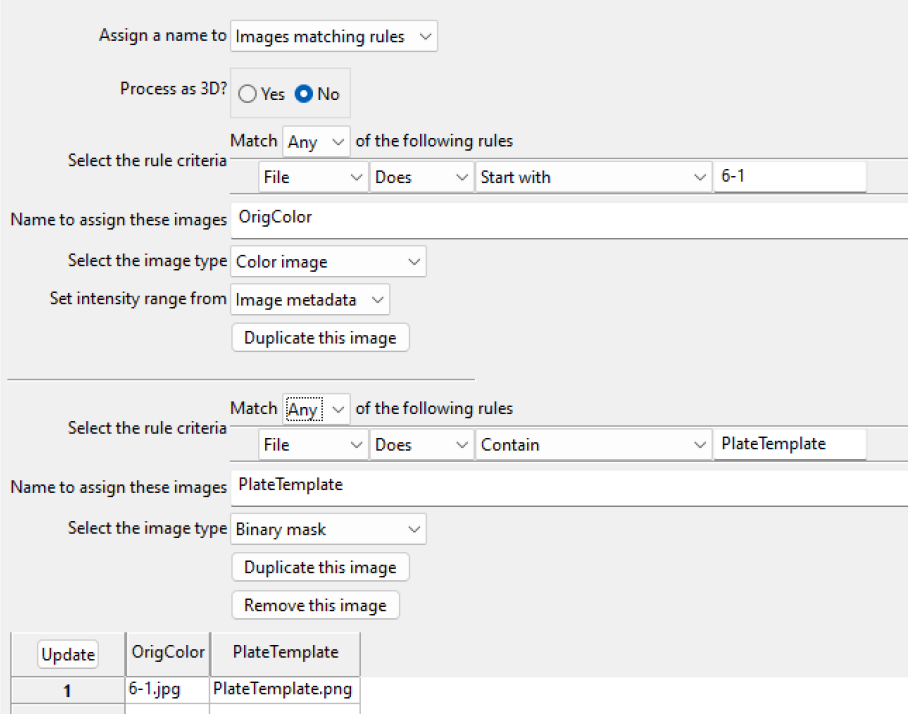


۳)

این قسمت خواسته‌ای ندارد.

٤)

تعیین نام هر تصویر:

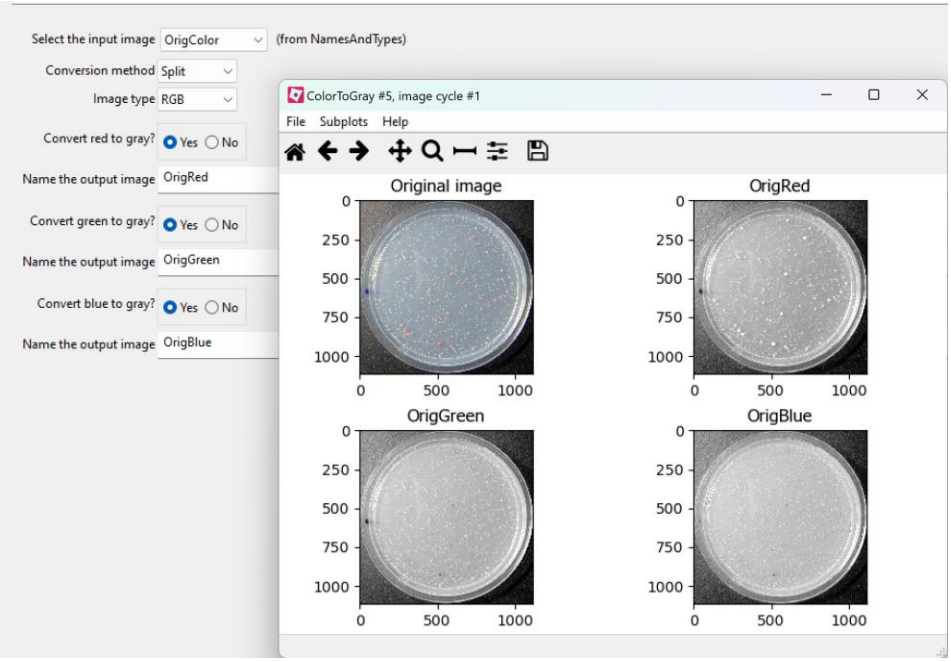


۵)

این قسمت خواسته‌ای ندارد.

۶)

جدا کردن کانال‌های تصویر: برای اینکار از منوی edit گزینه Add Module را انتخاب کرده و ماژول خواسته شده را اضافه می‌کنیم.



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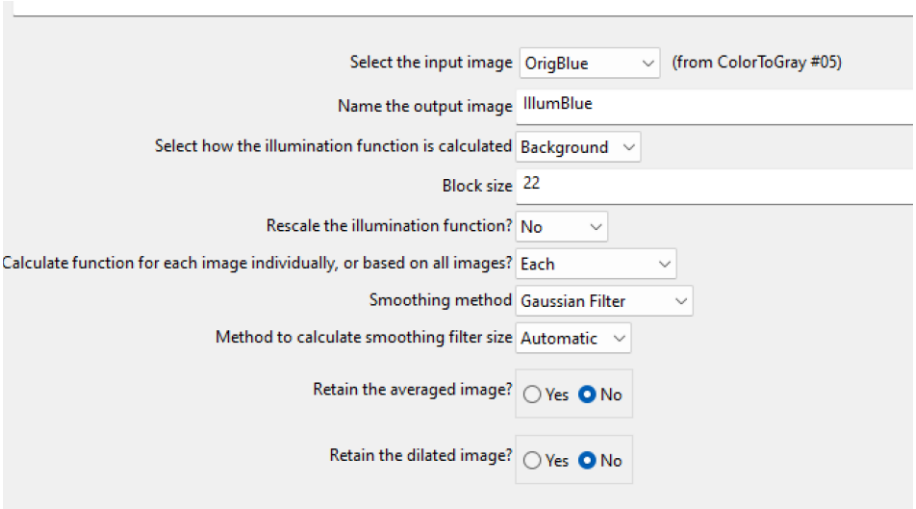
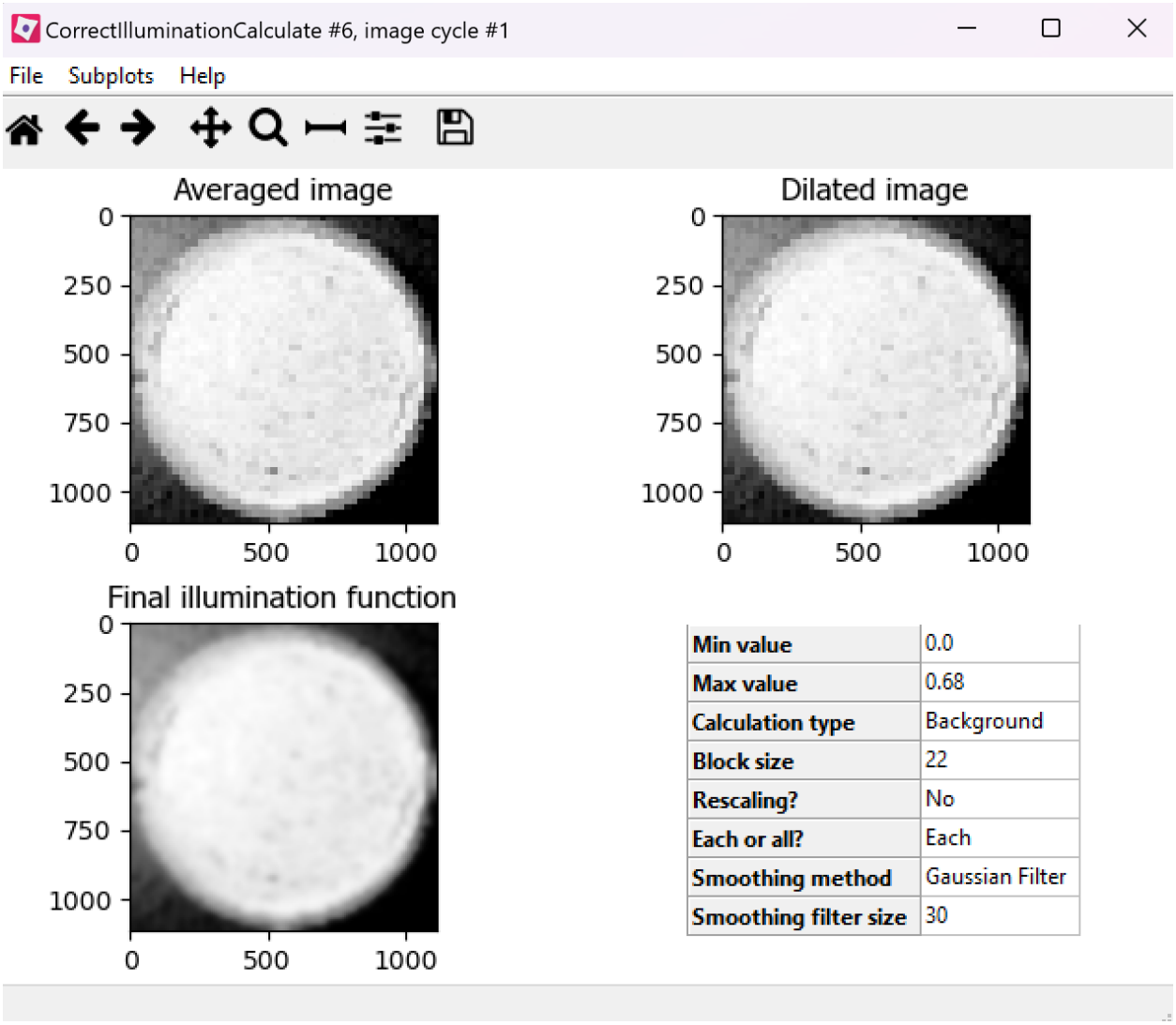
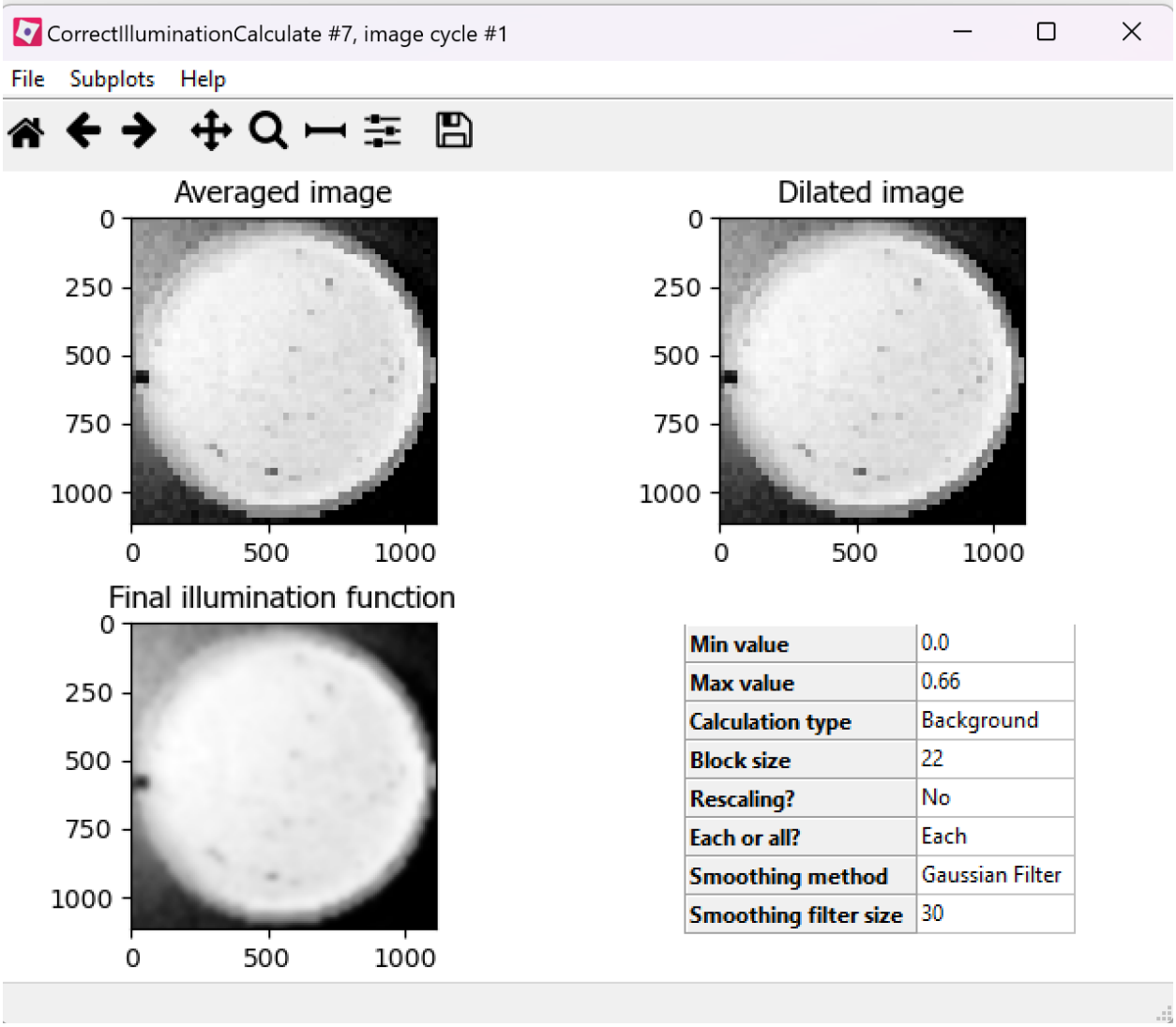
یک نمونه از پیکربندی ماژول:



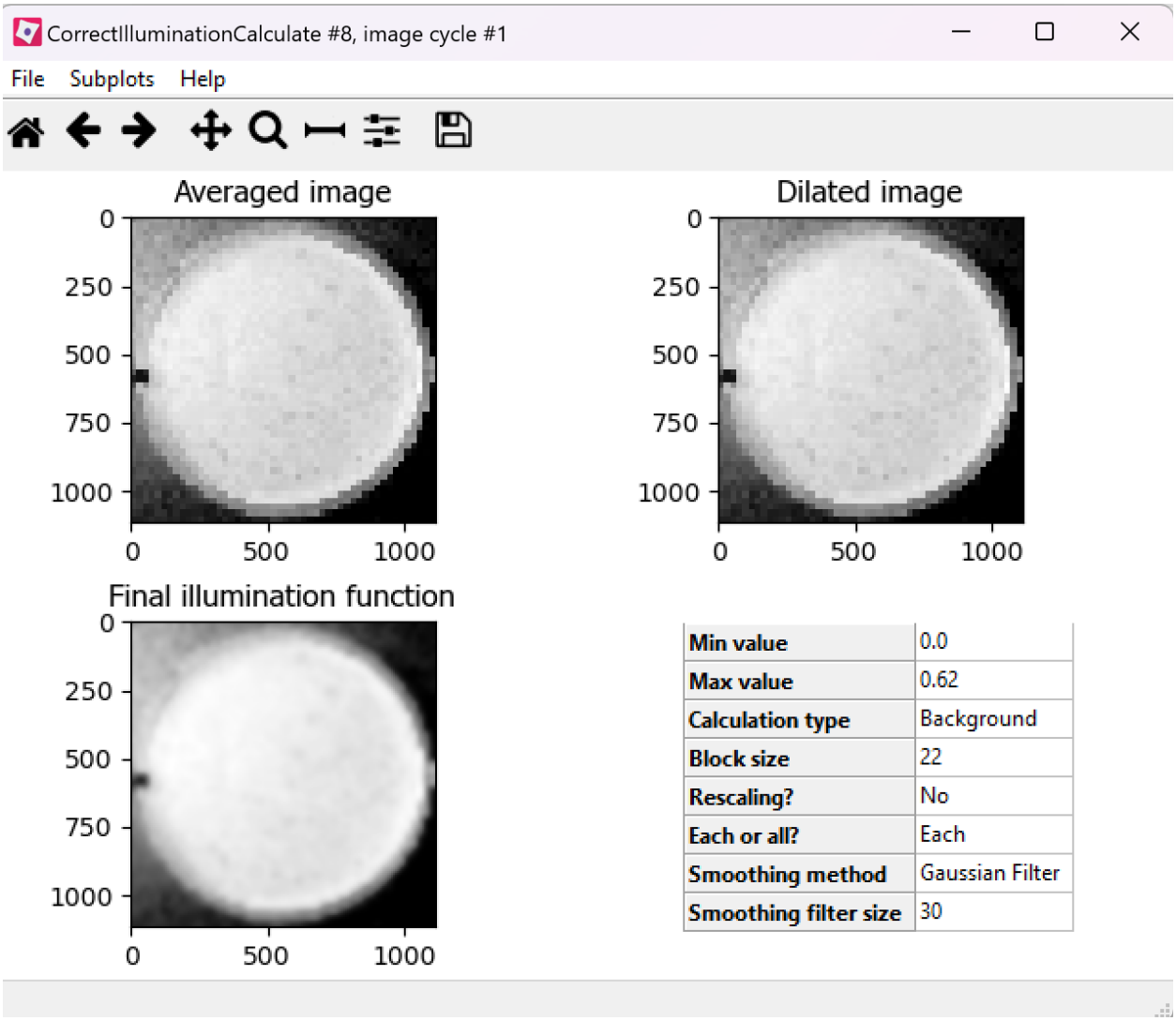
تصویر خروجی پس از ماژول مربوط به نور آبی:



ماژول نور سبز:

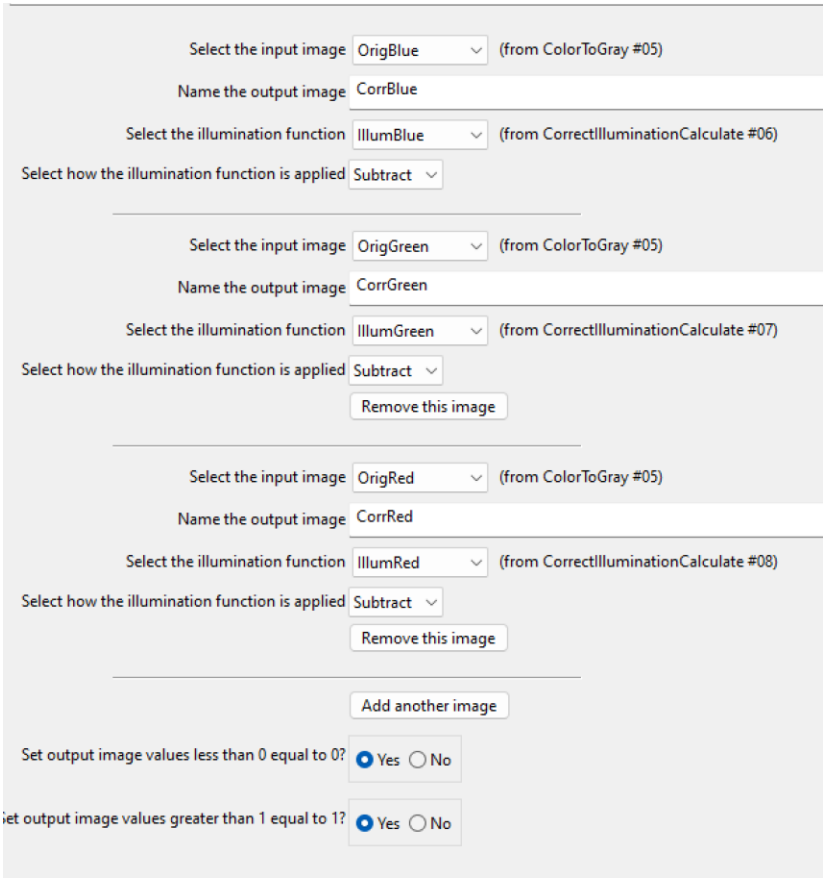


ماژول نور قرمز:

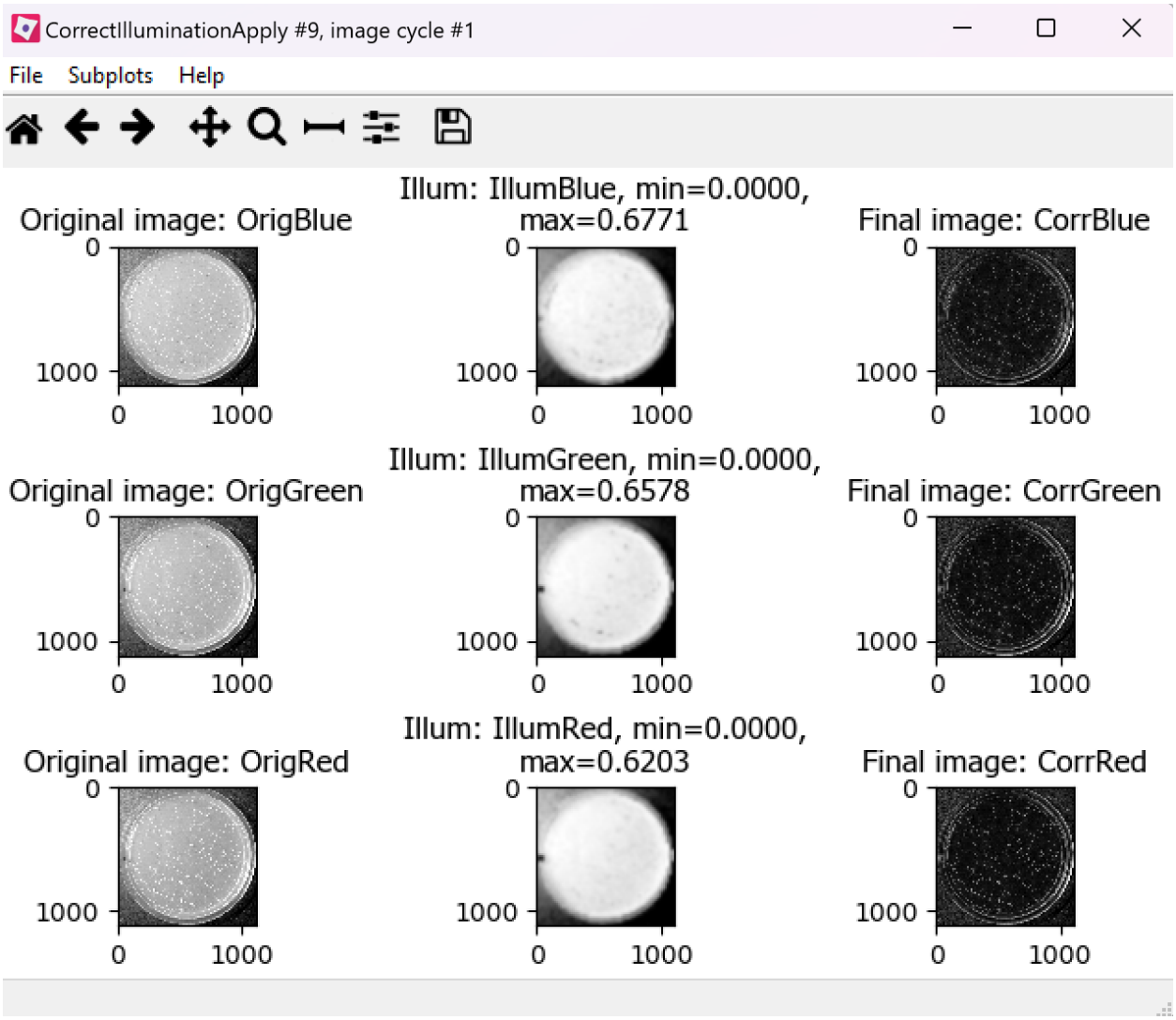


۸)

پیکربندی ماژول:

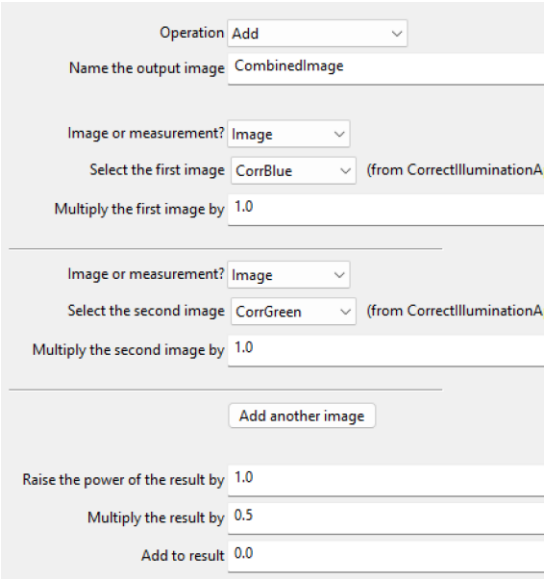

Select the input image
OrigBlue
(from ColorToGray #05)
Name the output image
CorrBlue
Select the illumination function
IllumBlue
(from CorrectIlluminationCalculate #06)
Select how the illumination function is applied
Subtract
Select the input image
OrigGreen
(from ColorToGray #05)
Name the output image
CorrGreen
Select the illumination function
IllumGreen
(from CorrectIlluminationCalculate #07)
Select how the illumination function is applied
Subtract
Remove this image
Select the input image
OrigRed
(from ColorToGray #05)
Name the output image
CorrRed
Select the illumination function
IllumRed
(from CorrectIlluminationCalculate #08)
Select how the illumination function is applied
Subtract
Remove this image
Add another image
Set output image values less than 0 equal to 0?
Yes
No
et output image values greater than 1 equal to 1?
Yes
No

تصویر خروجی:

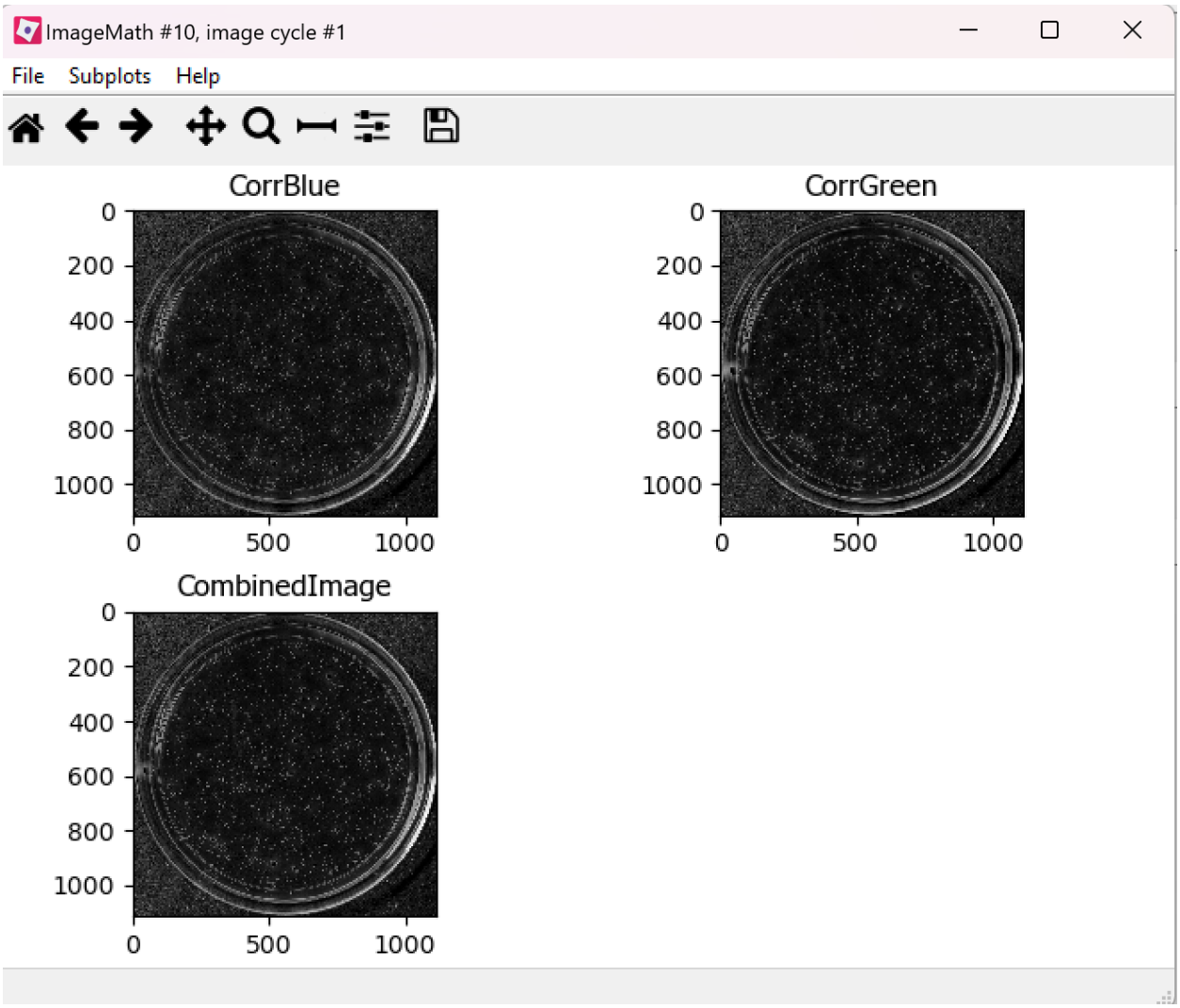

CorrectIlluminationApply #9, image cycle #1
File Subplots Help
Original image: OrigBlue
Illum: IllumBlue, min=0.0000, max=0.6771
Final image: CorrBlue
Original image: OrigGreen
Illum: IllumGreen, min=0.0000, max=0.6578
Final image: CorrGreen
Original image: OrigRed
Illum: IllumRed, min=0.0000, max=0.6203
Final image: CorrRed
0
1000

۹)

پیکربندی:

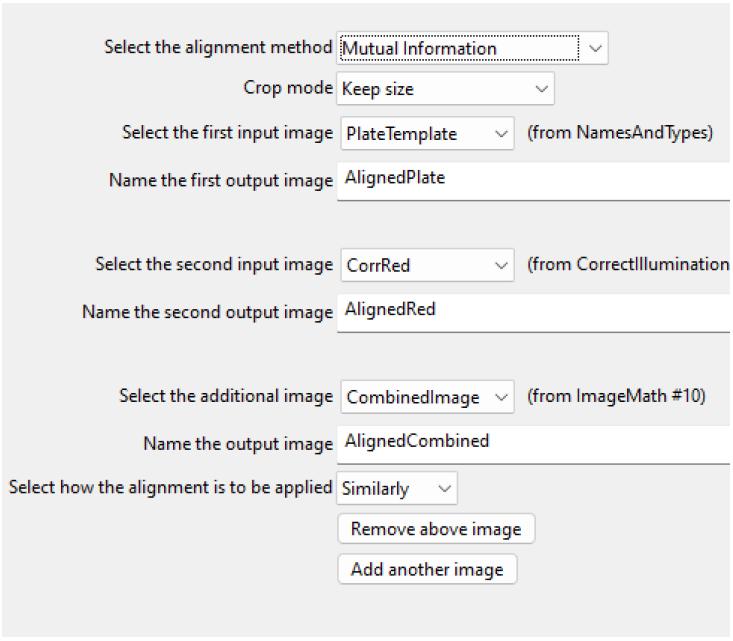

Operation
Add
Name the output image
CombinedImage
Image or measurement?
Image
Select the first image
CorrBlue
(from CorrectIlluminationA
Multiply the first image by
1.0
Image or measurement?
Image
Select the second image
CorrGreen
(from CorrectIlluminationA
Multiply the second image by
1.0
Add another image
Raise the power of the result by
1.0
Multiply the result by
0.5
Add to result
0.0

تصویر خروجی:

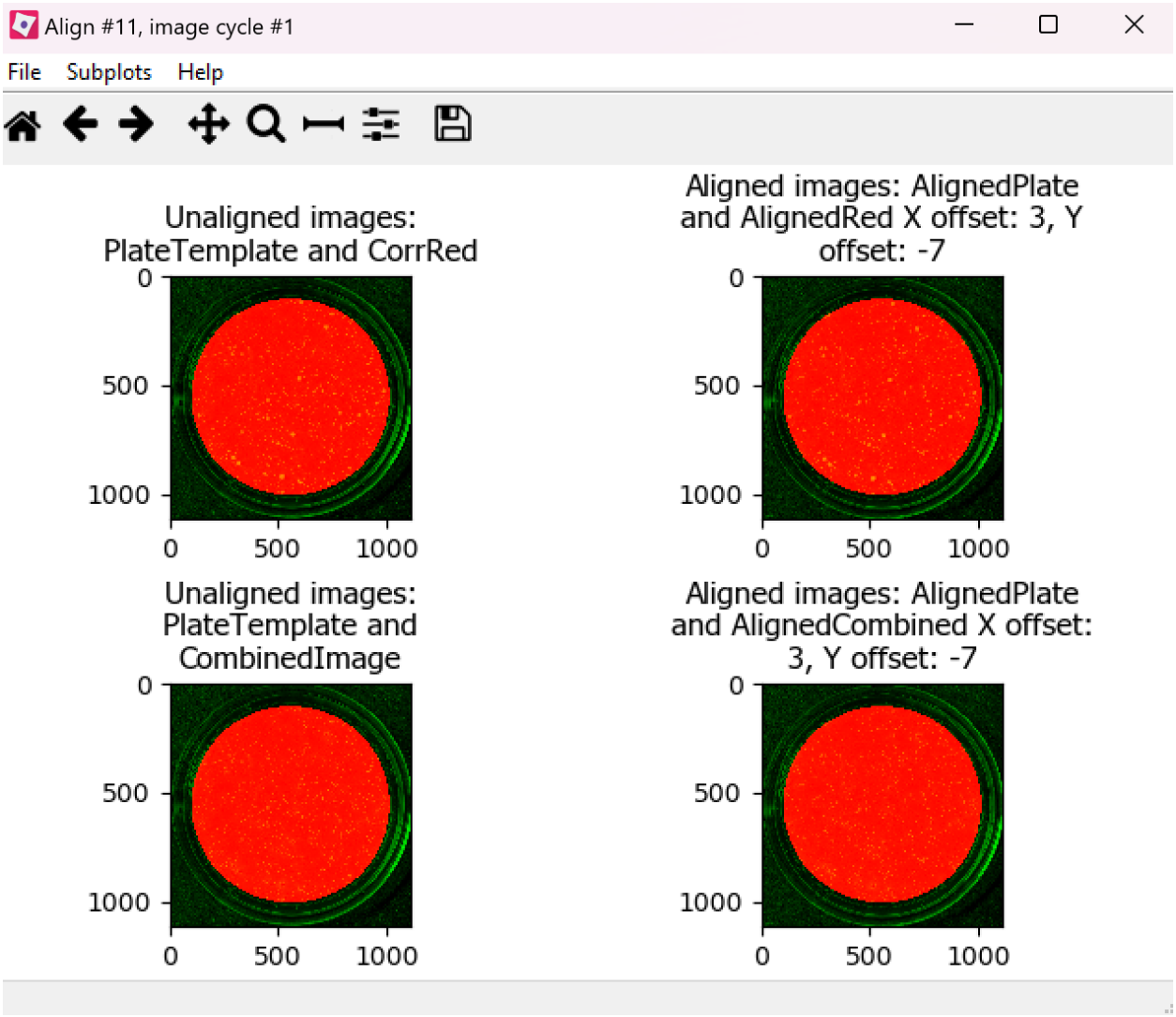

ImageMath #10, image cycle #1
File
Subplots
Help
CorrBlue
CorrGreen
CombinedImage
0
200
400
600
800
1000
0
500
1000

۱۰)

پیکربندی:


Select the alignment method
Mutual Information
Crop mode
Keep size
Select the first input image
PlateTemplate
(from NamesAndTypes)
Name the first output image
AlignedPlate
Select the second input image
CorrRed
(from CorrectIllumination
Name the second output image
AlignedRed
Select the additional image
CombinedImage
(from ImageMath #10)
Name the output image
AlignedCombined
Select how the alignment is to be applied
Similarly
Remove above image
Add another image

تصویر خروجی:



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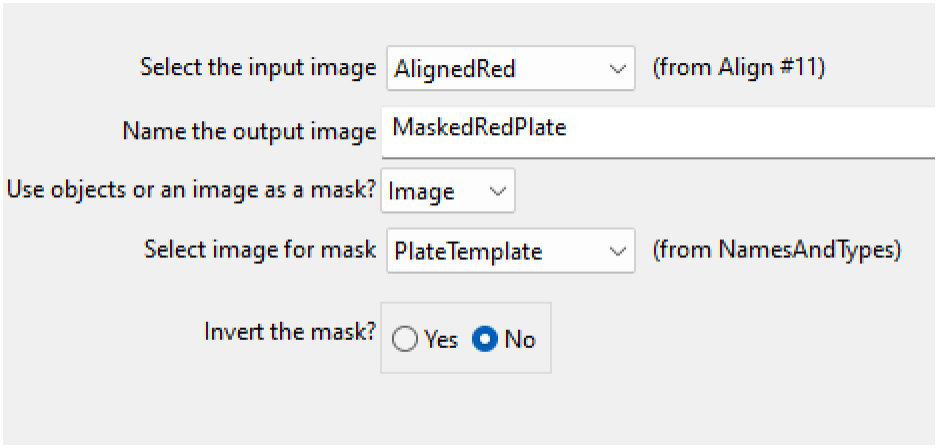
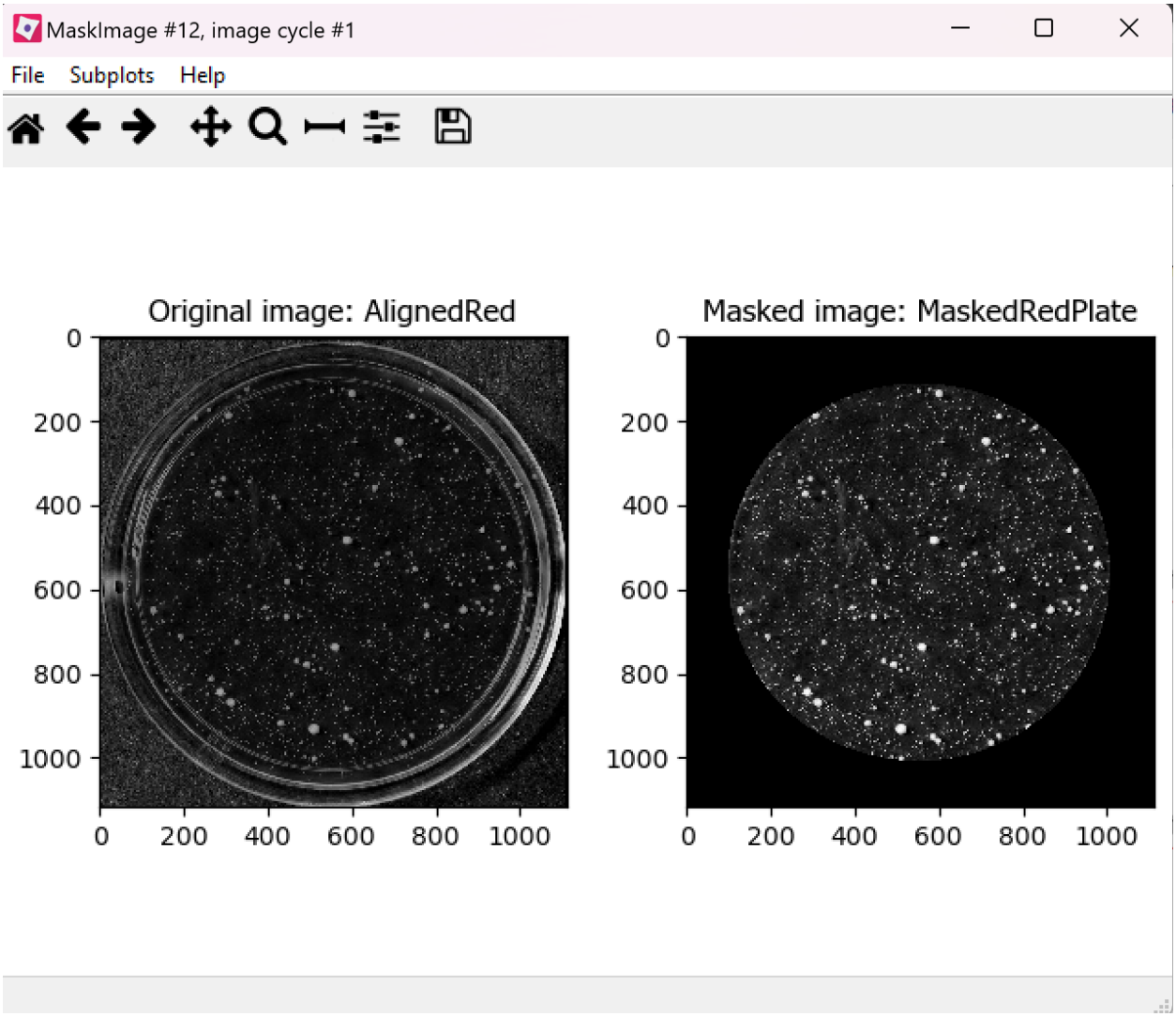
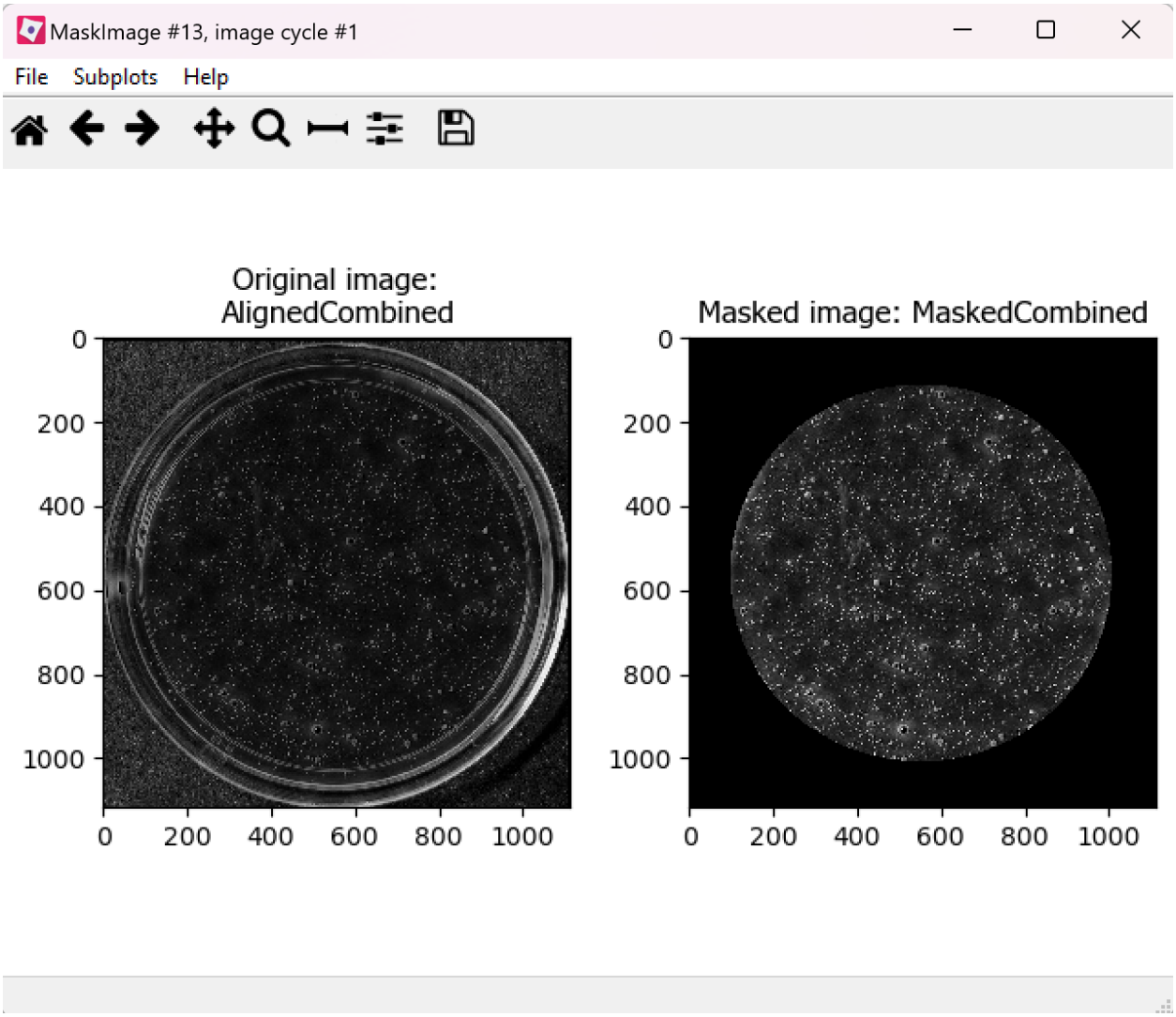
نمونه پیکربندی:



خروجی برای RedPlate:



خروجی برای CombinedPlate:



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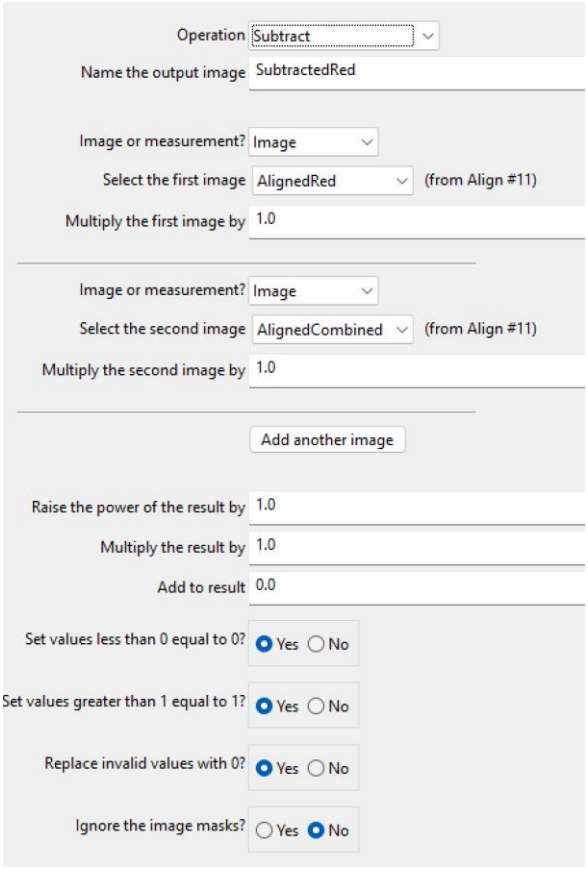
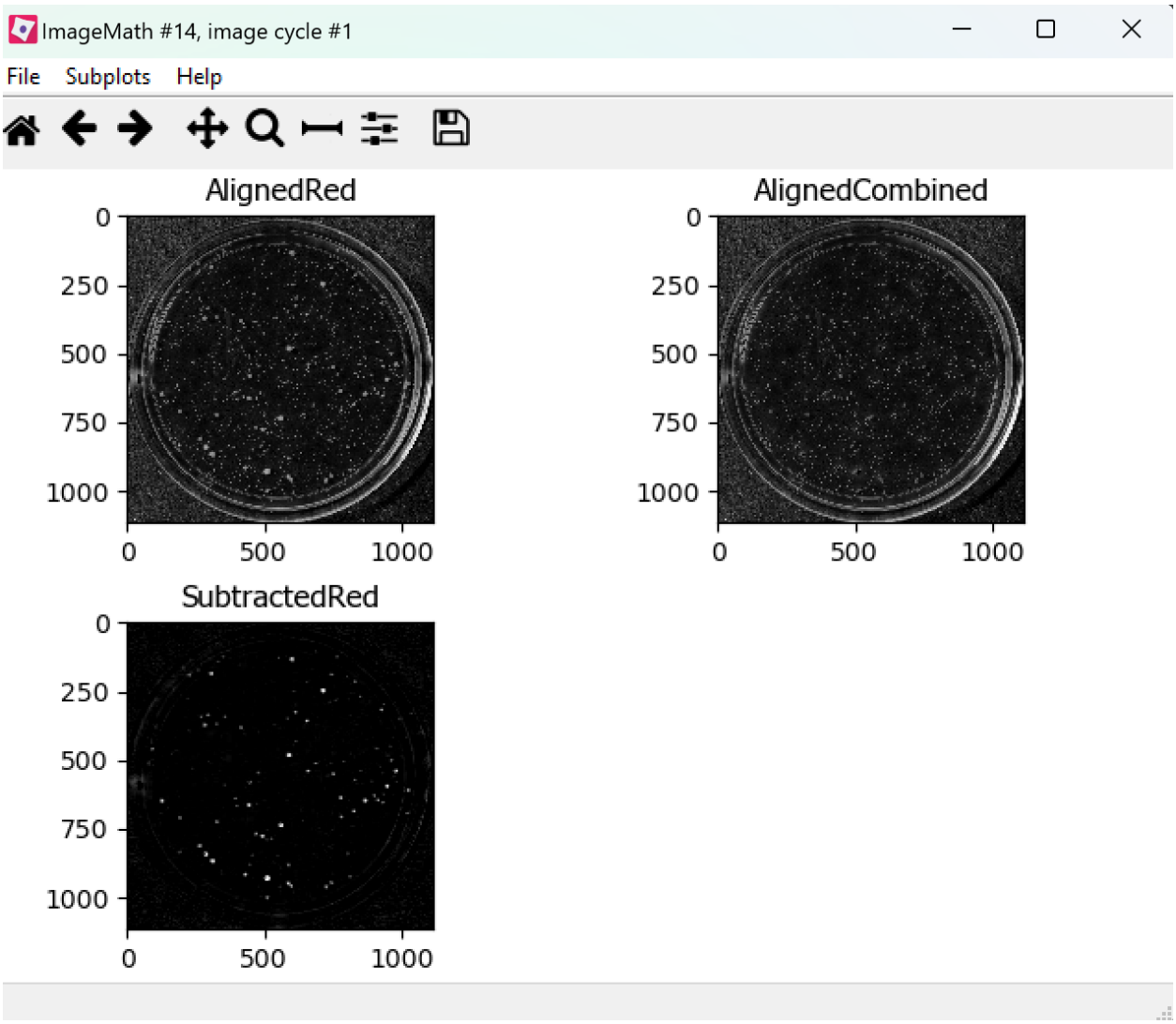
پیکربندی:


Operation
Subtract
Name the output image
SubtractedRed
Image or measurement?
Image
Select the first image
AlignedRed
(from Align #11)
Multiply the first image by
1.0
Image or measurement?
Image
Select the second image
AlignedCombined
(from Align #11)
Multiply the second image by
1.0
Add another image
Raise the power of the result by
1.0
Multiply the result by
1.0
Add to result
0.0
Set values less than 0 equal to 0?
Yes
No
Set values greater than 1 equal to 1?
Yes
No
Replace invalid values with 0?
Yes
No
Ignore the image masks?
Yes
No

تصویر خروجی:



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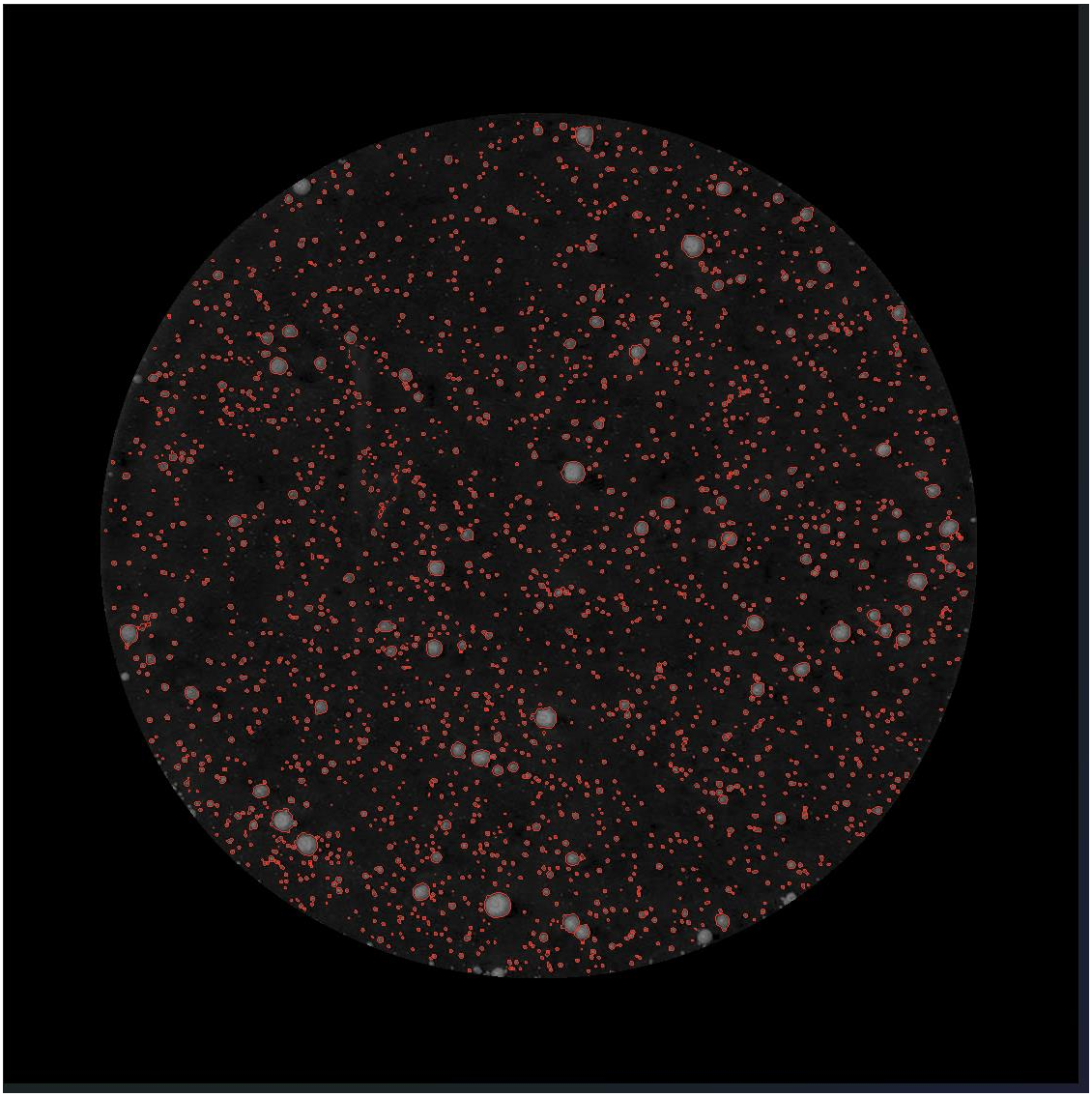
تصویر خروجی:



دو فایل csv نیز به همراه تصاویر، در دایرکتوری ./pipeline_outputs ذخیره شدند.