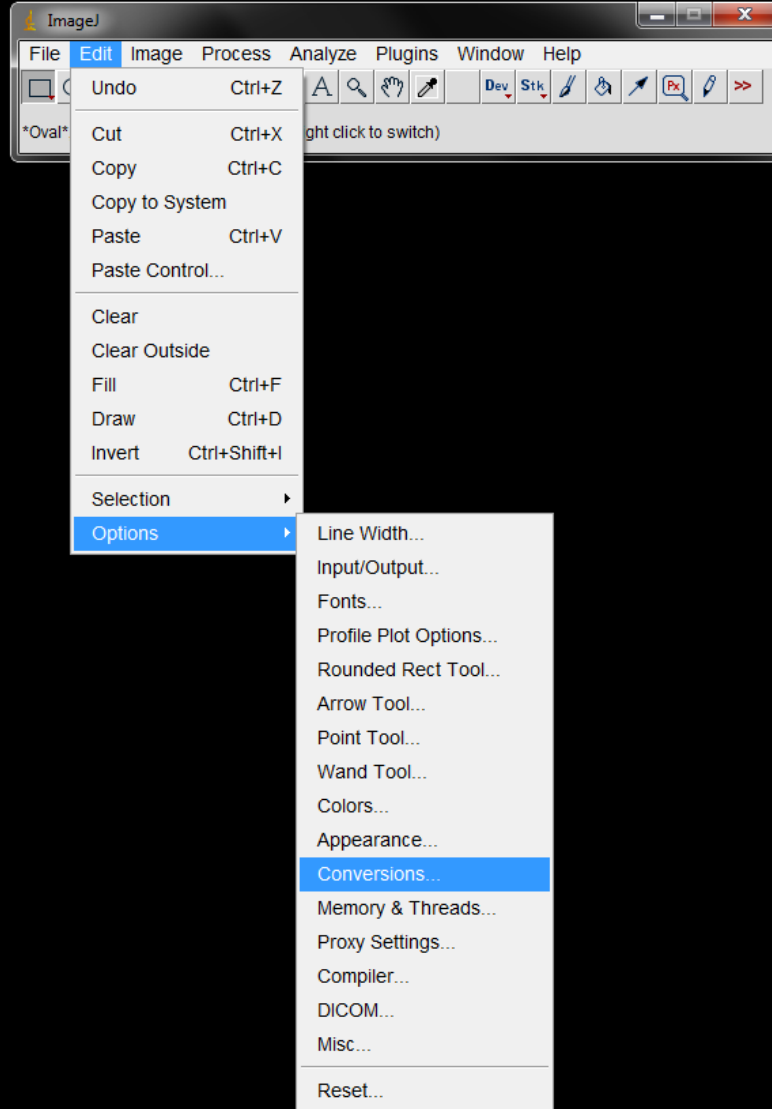


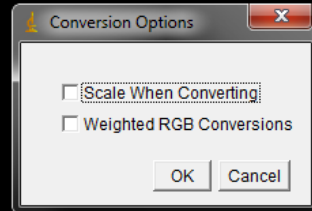
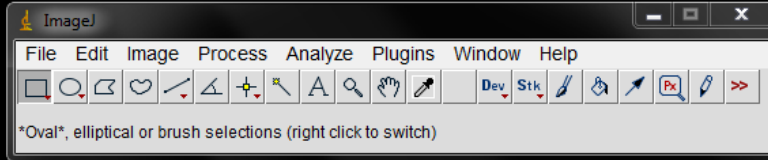
# **Tiff Processing & 2D-1D Conversion**

**May 20, 2014**

# Tiff Summation ImageJ

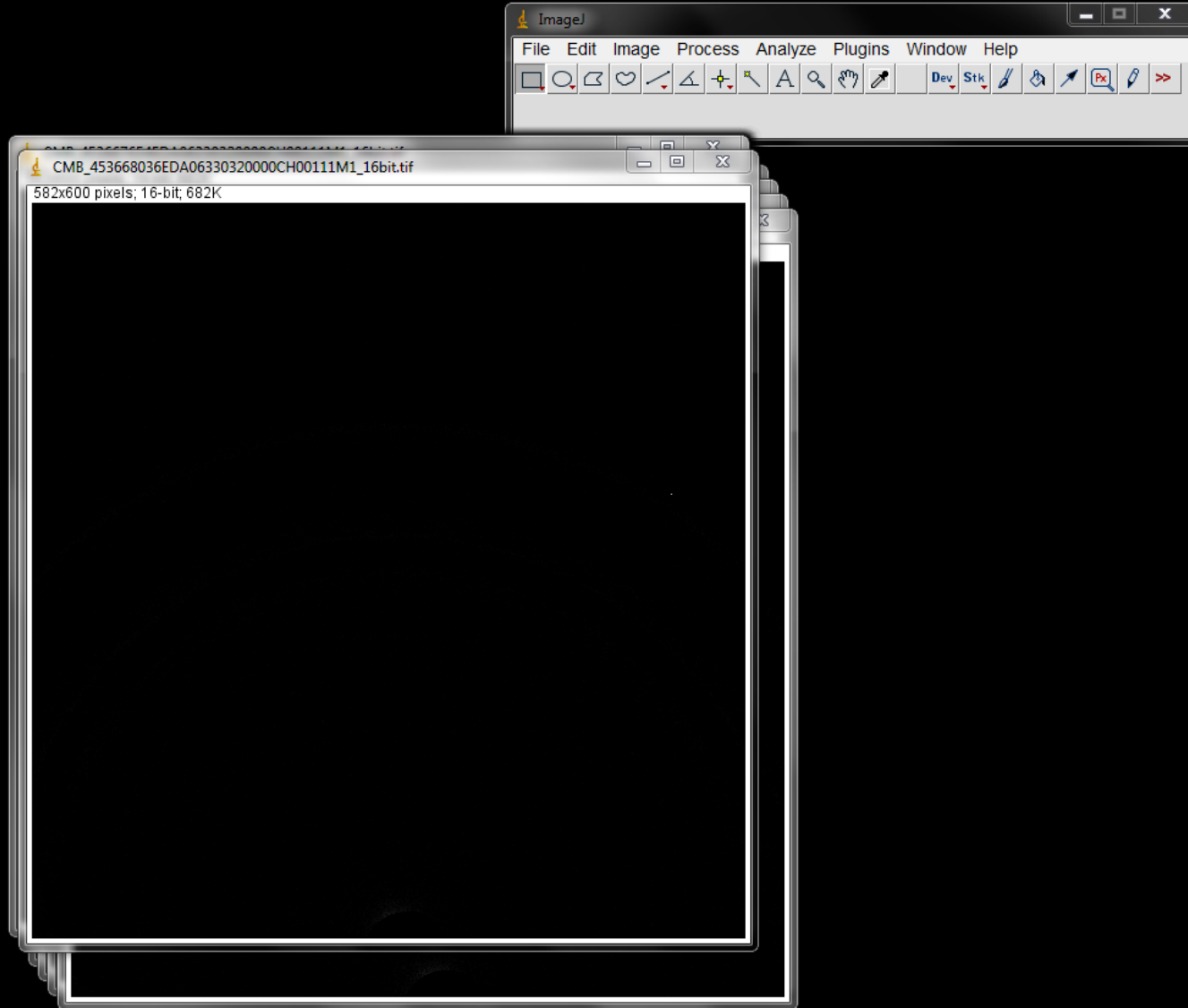


Open ImageJ; Edit > Options > Conversions



Uncheck "Scale When Converting"

\*\* Note: You will need to do this each time you open ImageJ \*\*



Drag all 16bit images into ImageJ  
(16bit is preferred over 8-bit)

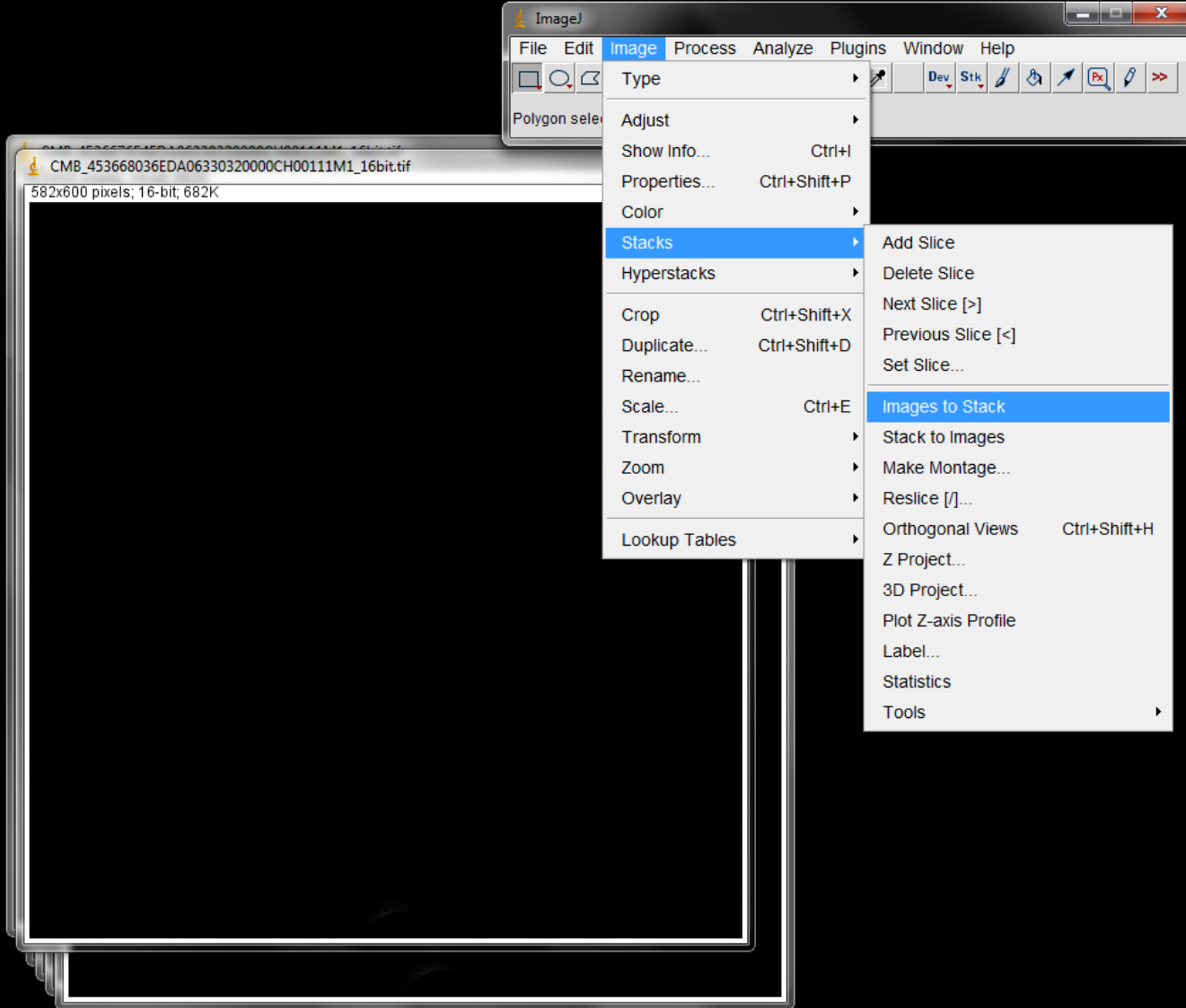
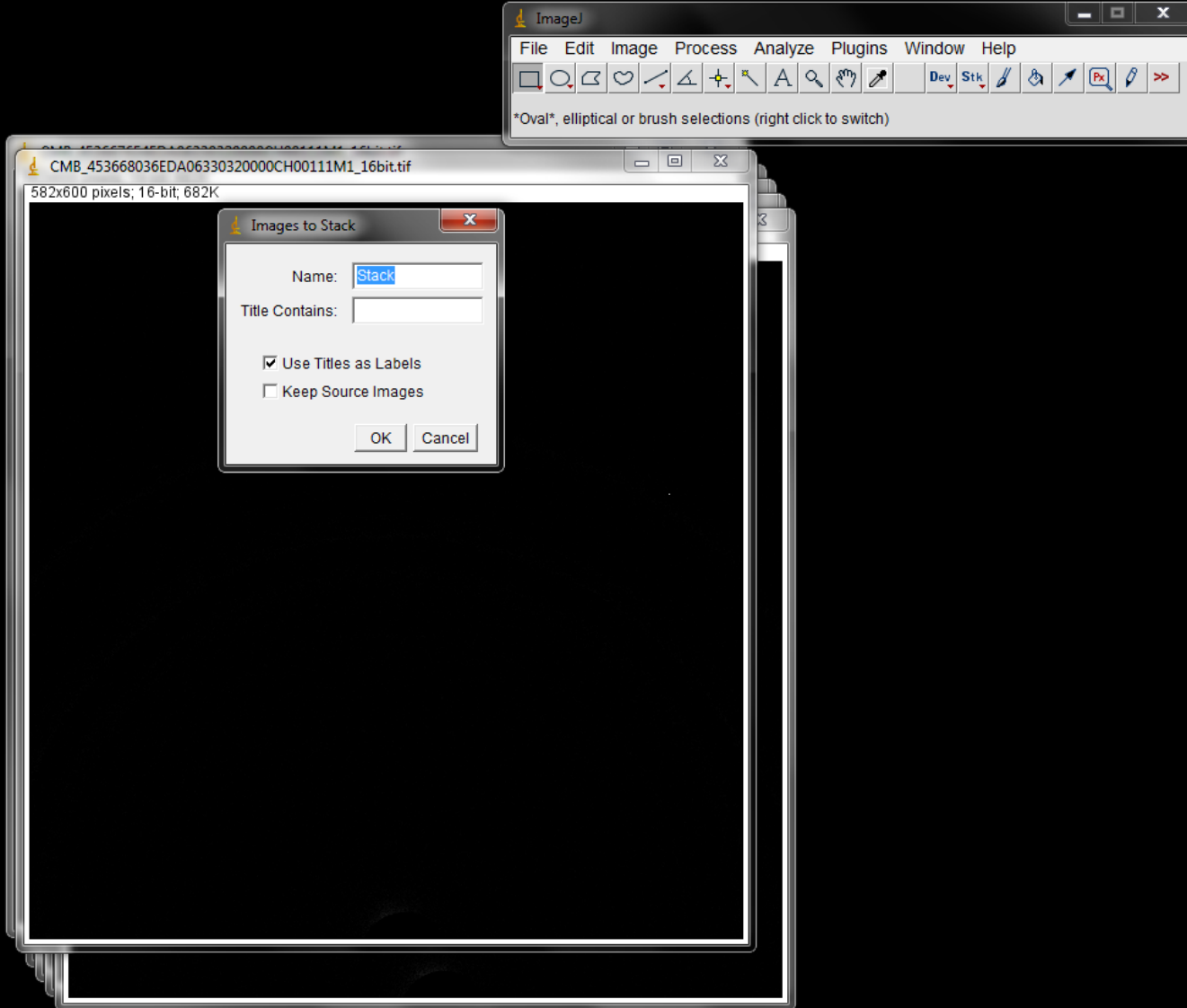


Image > Stacks > Images to Stack



Select OK

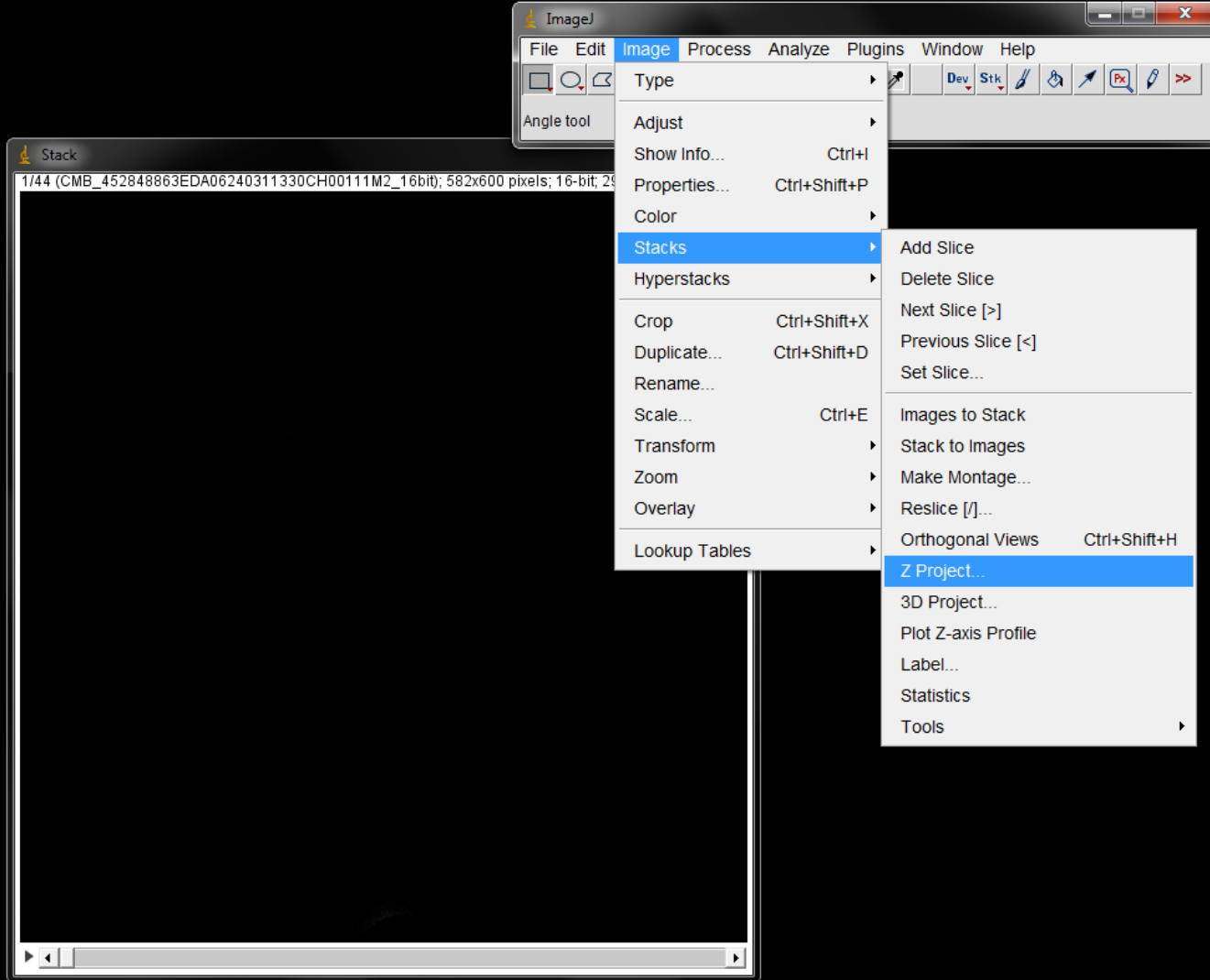
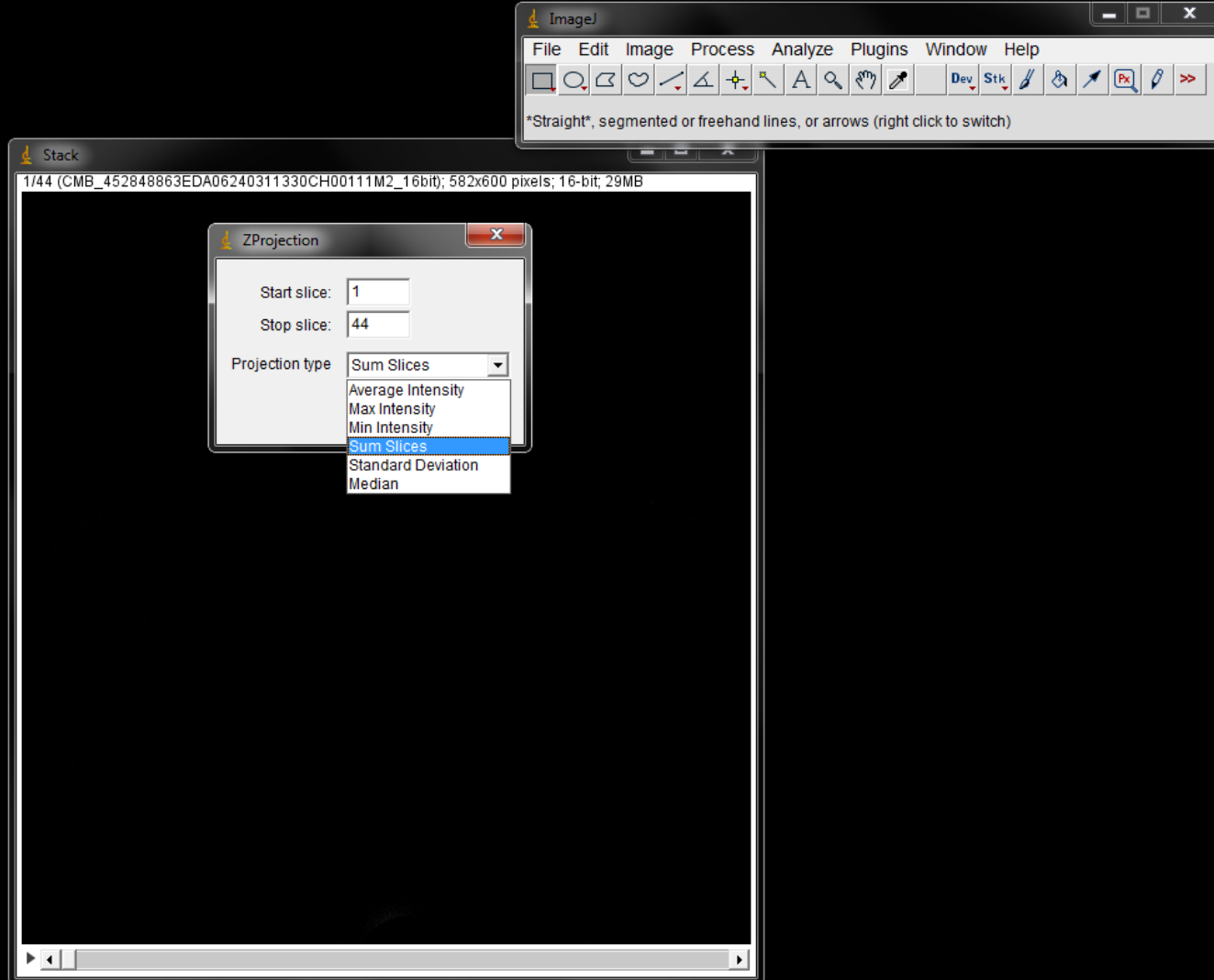
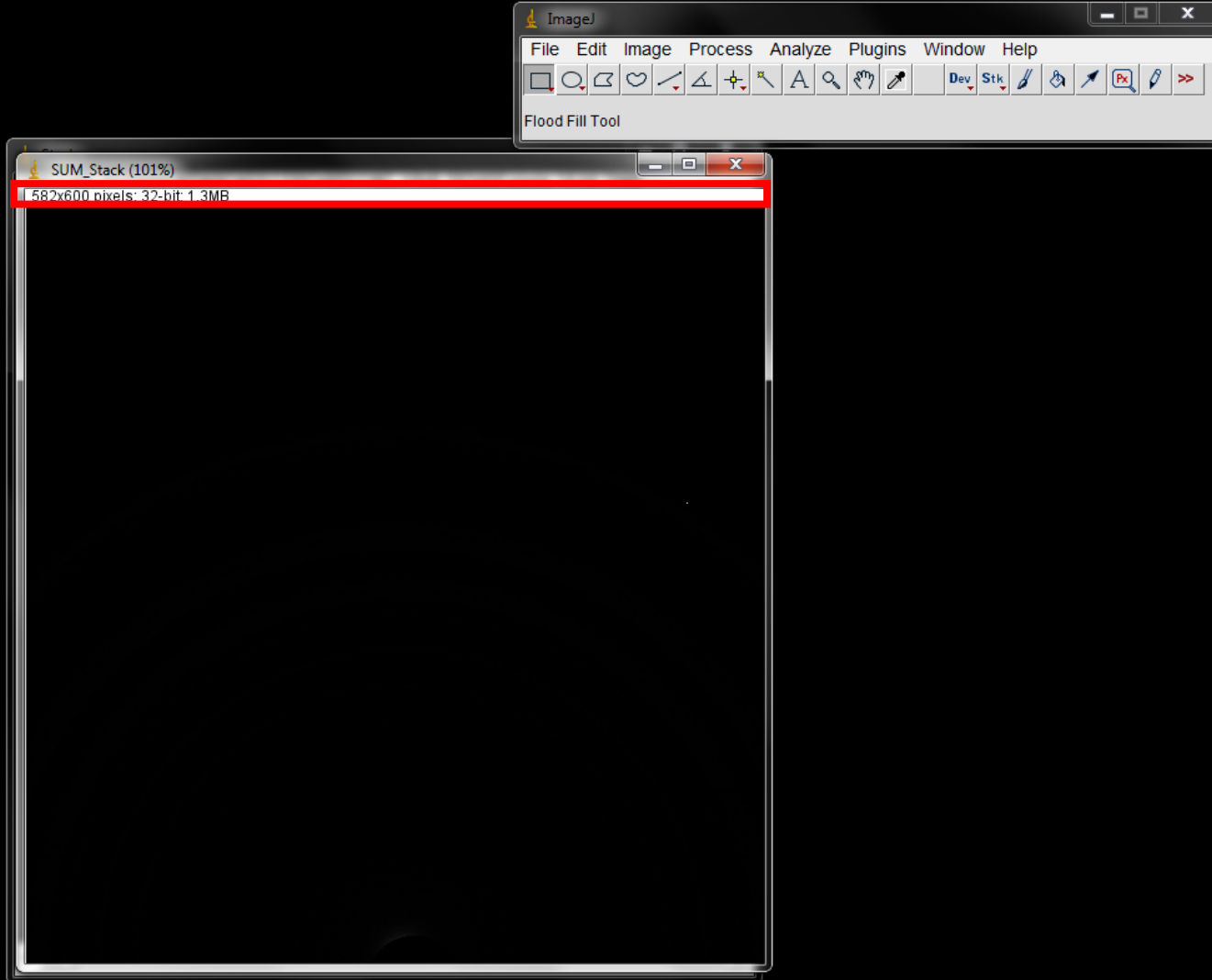


Image > Stacks > Z Project...



Set Projection type to “Sum Slices” and hit OK



The summed files will produce a 32-bit image

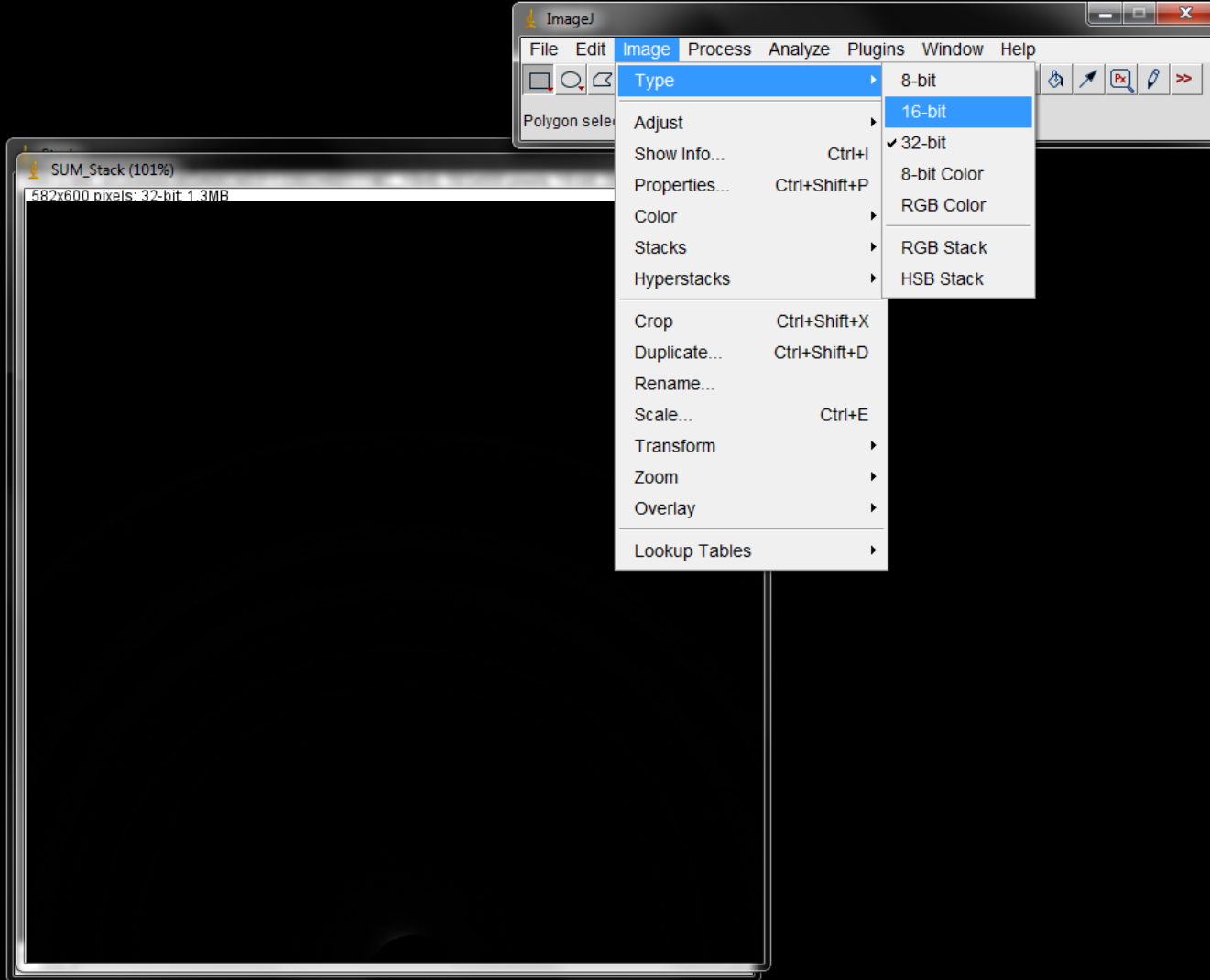
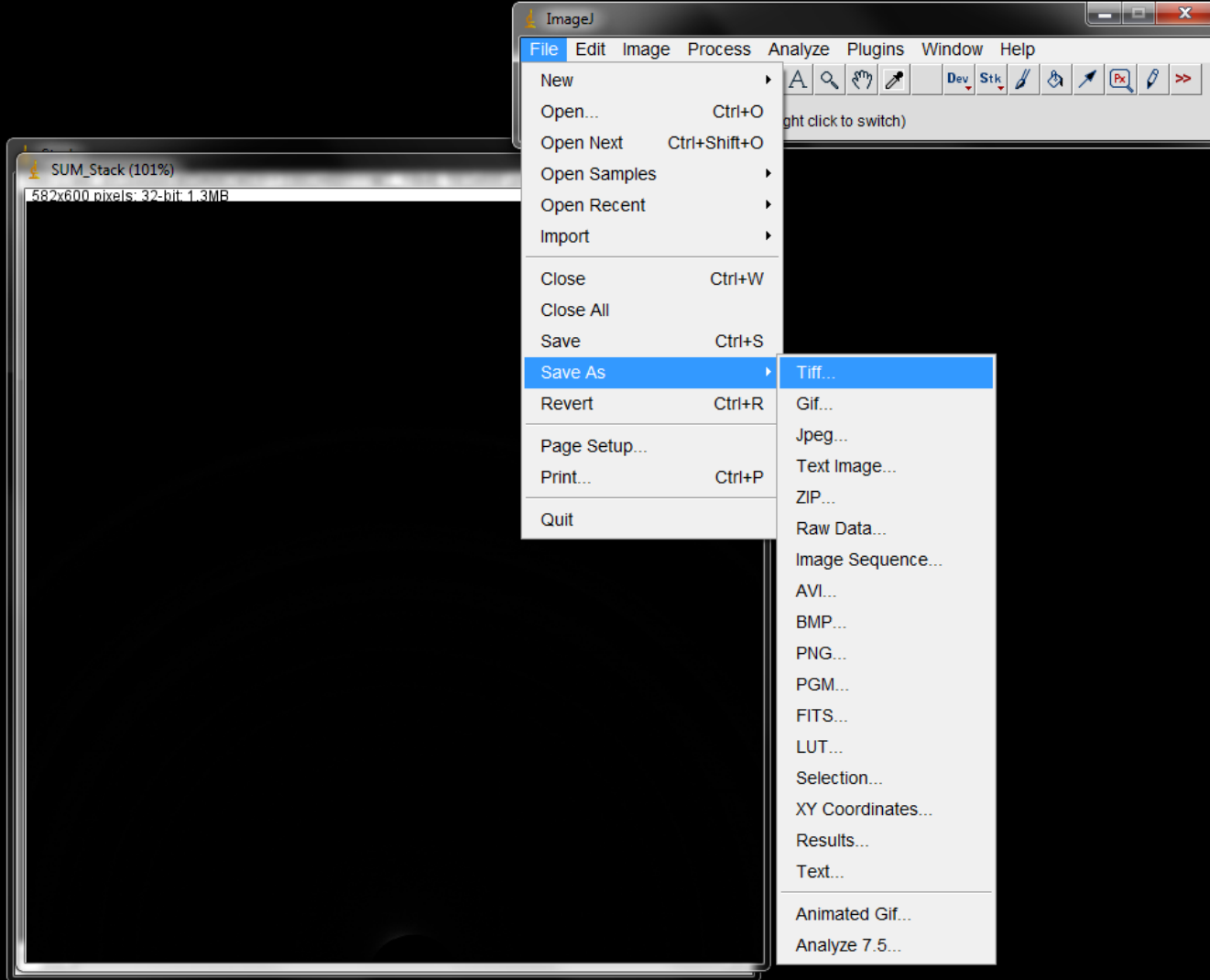


Image > Type > 16-bit (to convert to a 16-bit image)



File > Save As > Tiff

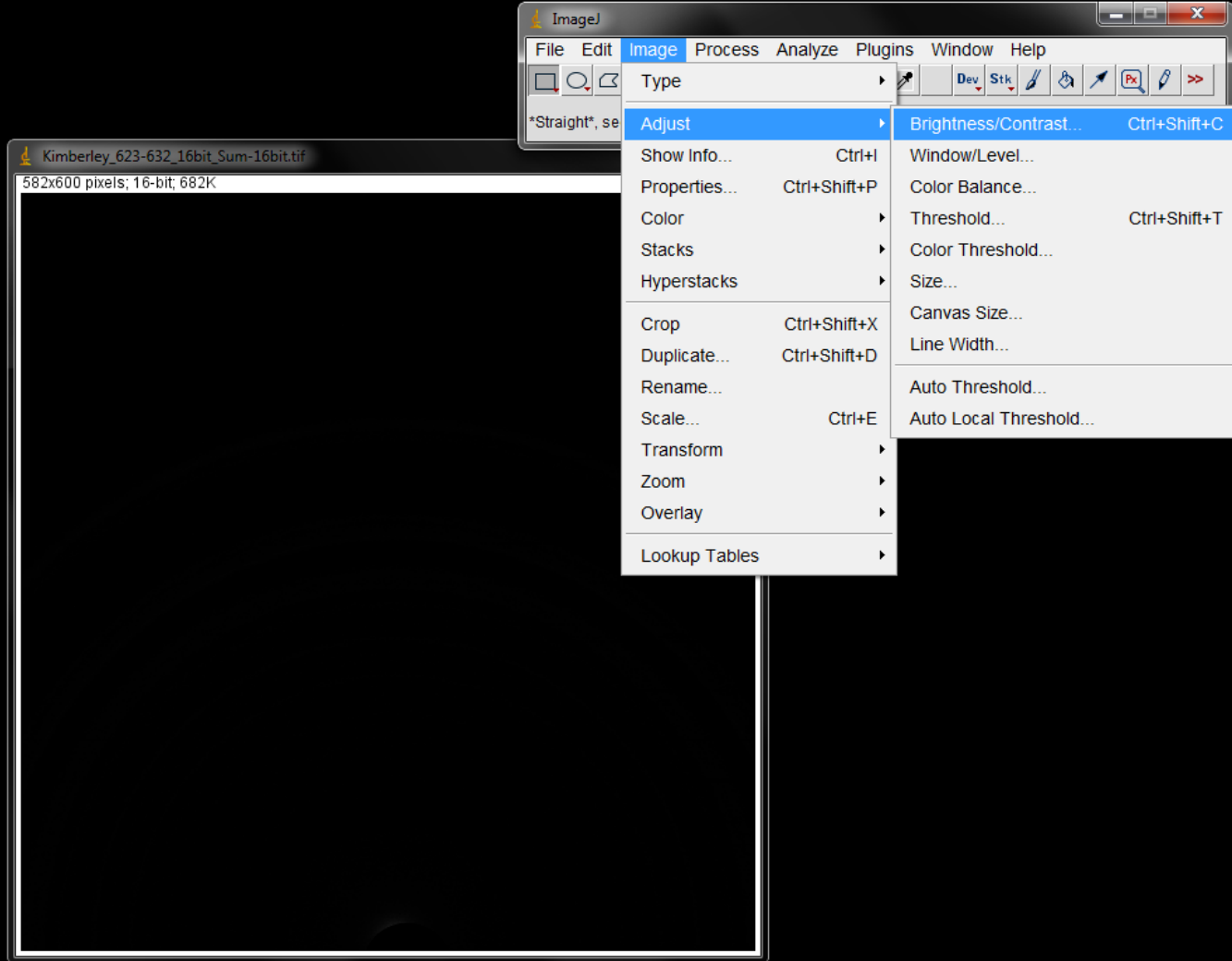


Image > Adjust > Brightness/Contrast...

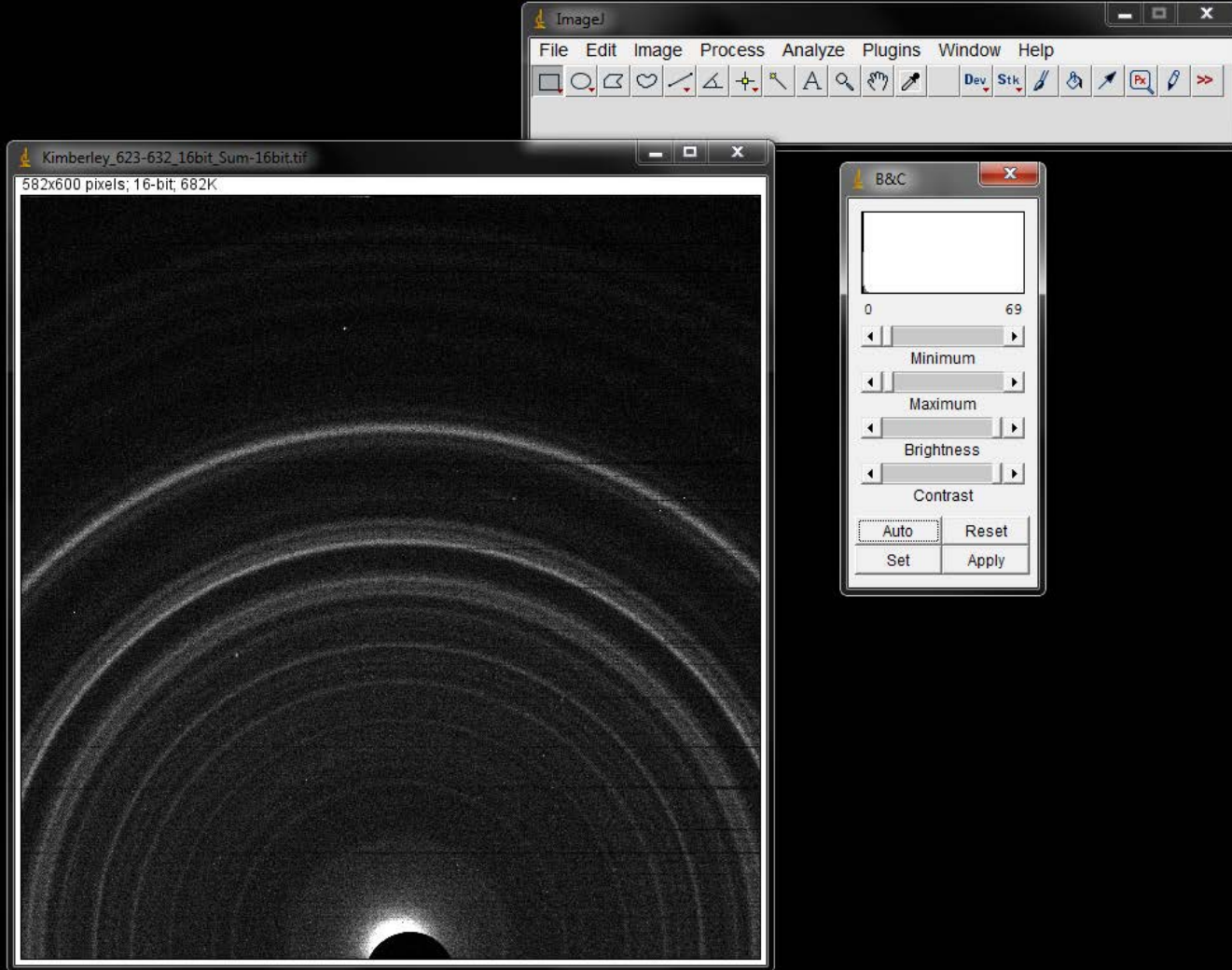
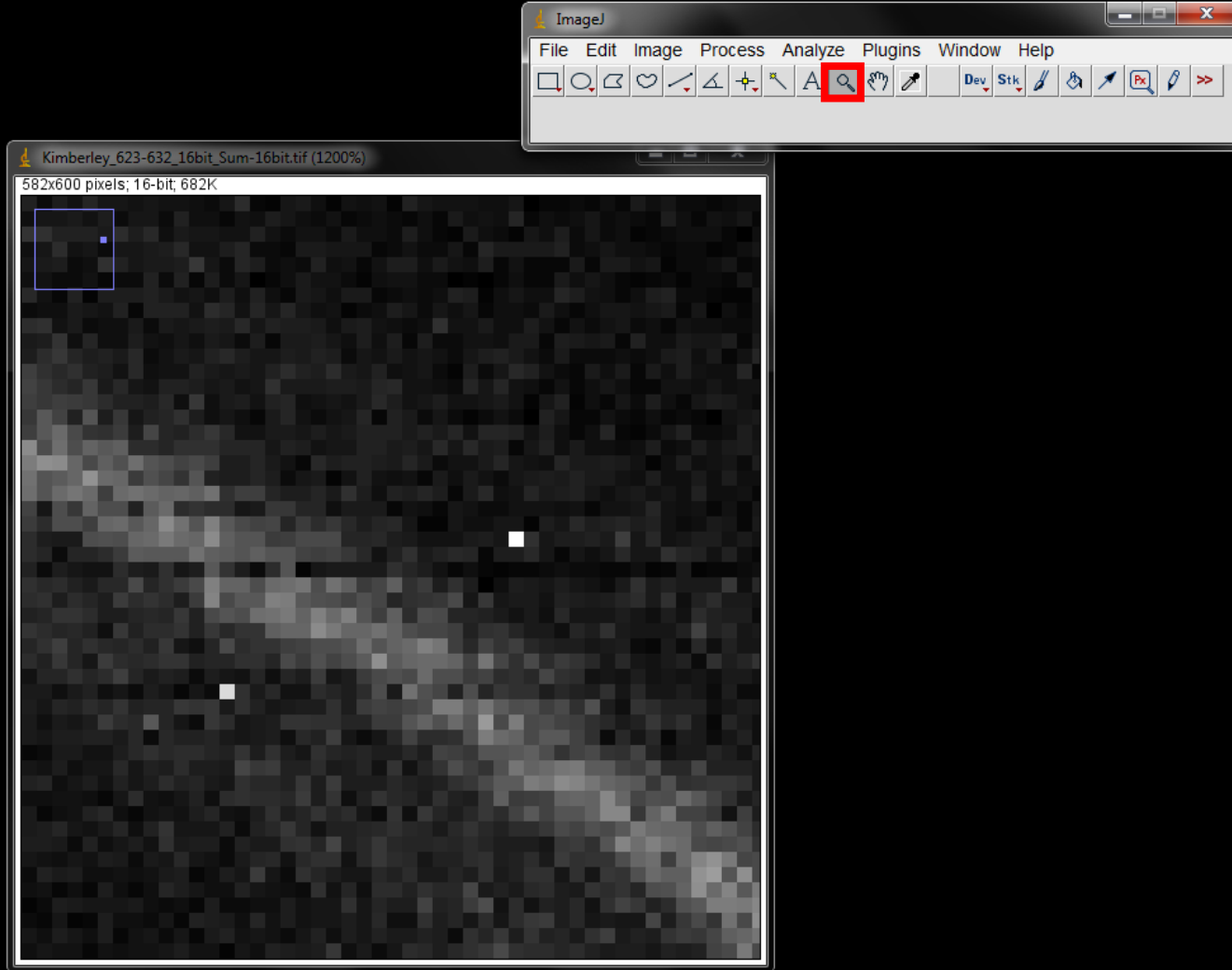
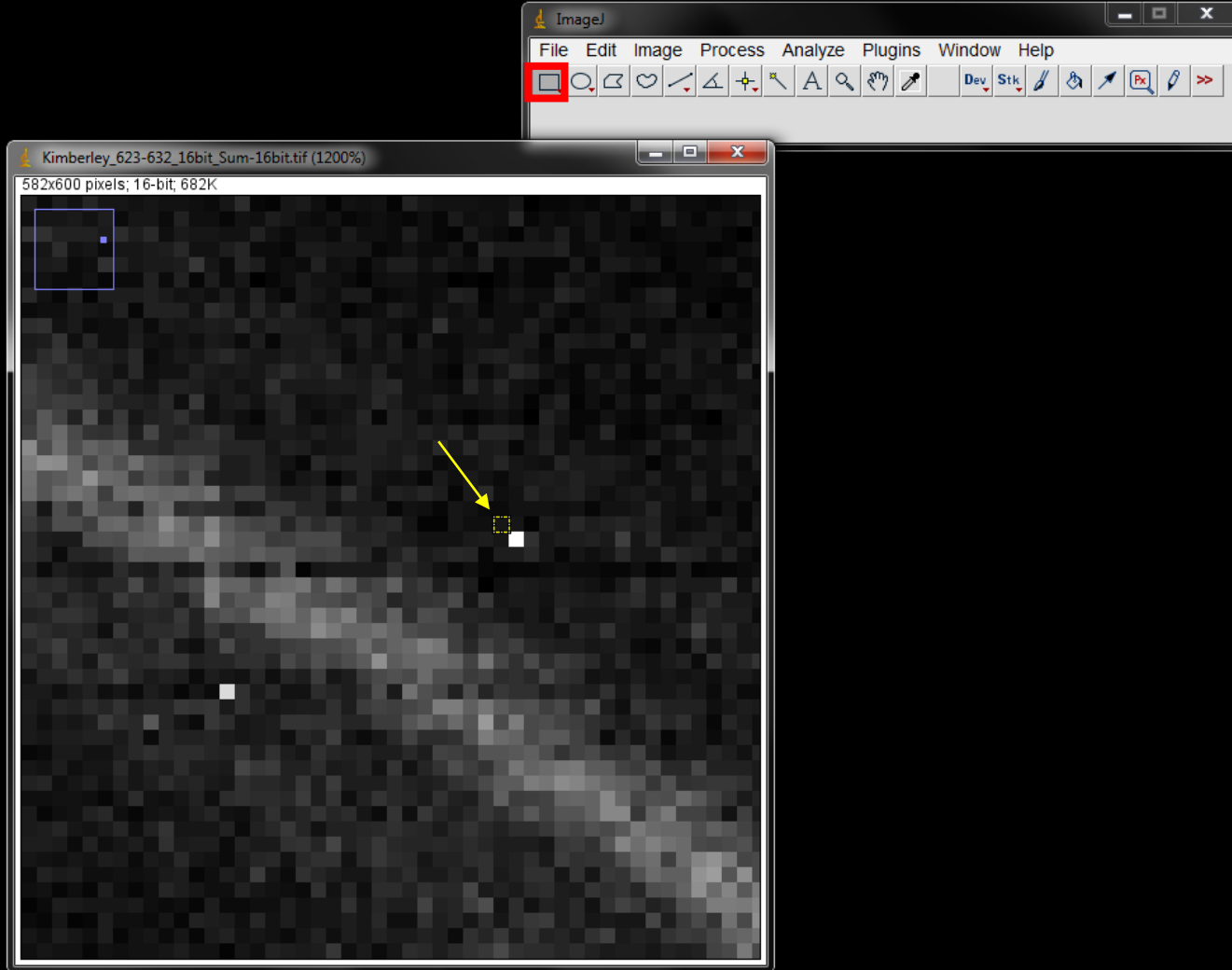


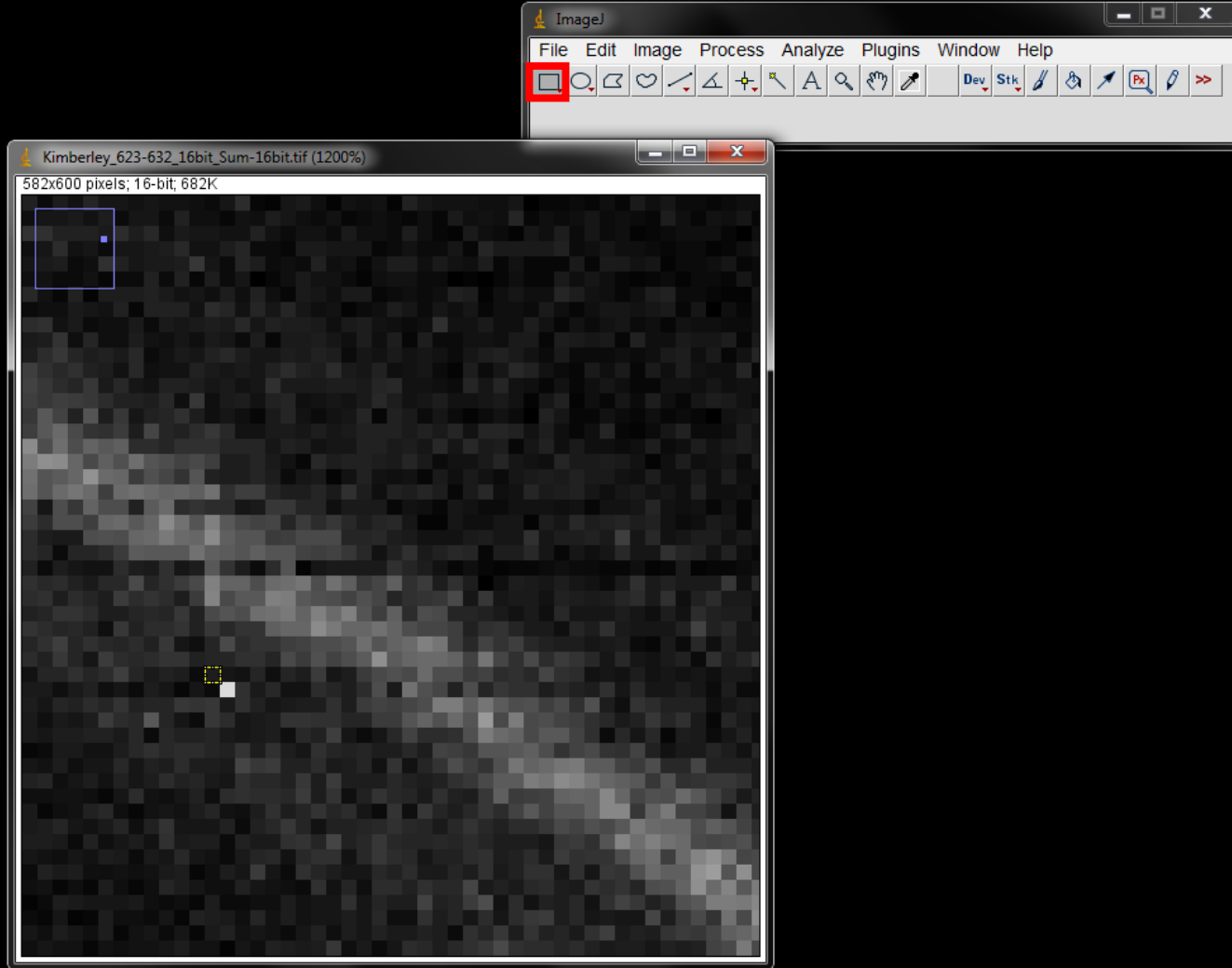
Image > Adjust > Brightness/Contrast...



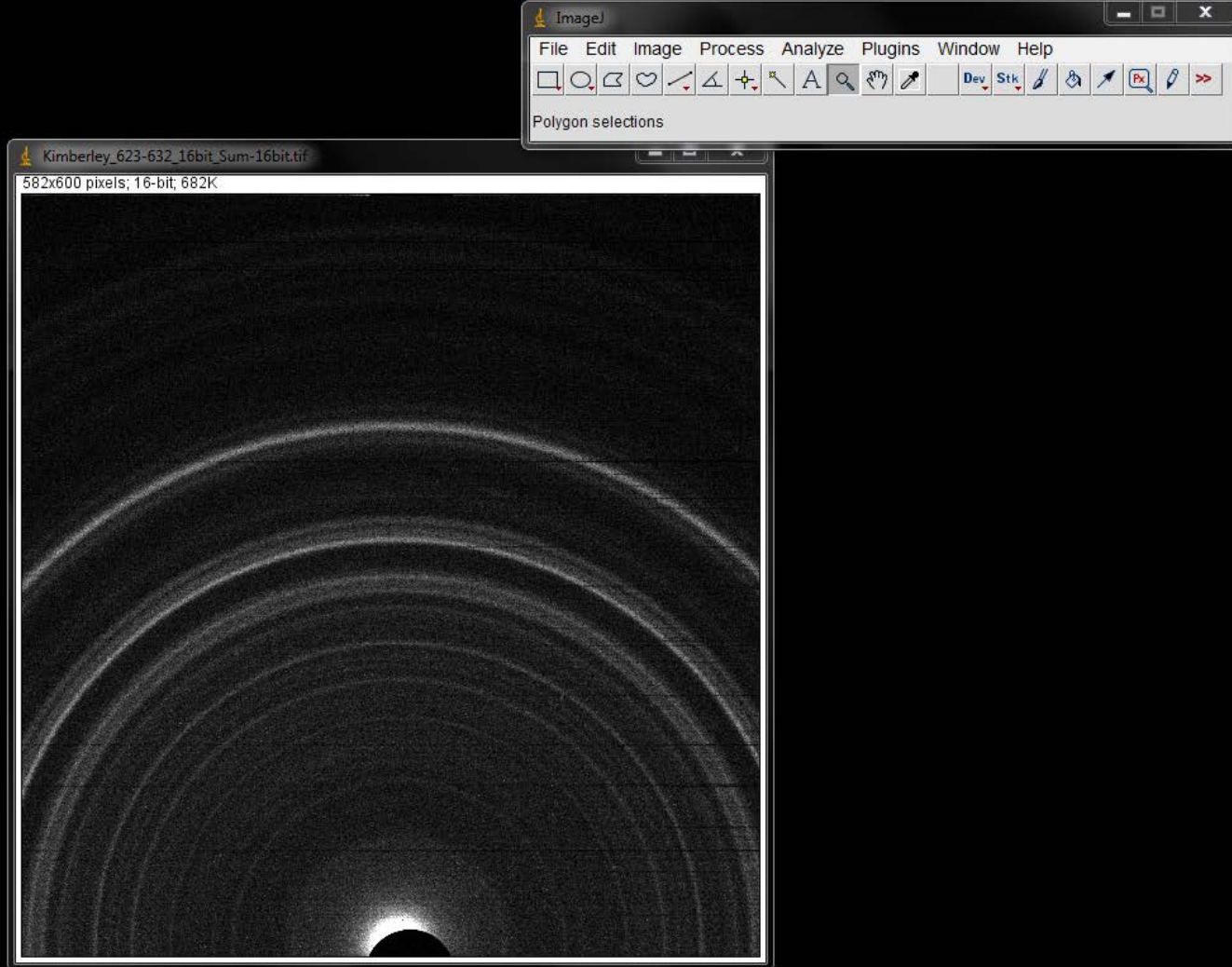
Use the magnifying glass to zoom into the region with spots  
(zoom in - left click, zoom out - right click)



Use the rectangular selection tool to select an adjacent pixel. Copy and paste the selection (Ctrl C, Ctrl V) and use the arrow key on the keyboard to move the pasted box on top of the bright pixel. Hit the enter key to secure the position of the box.



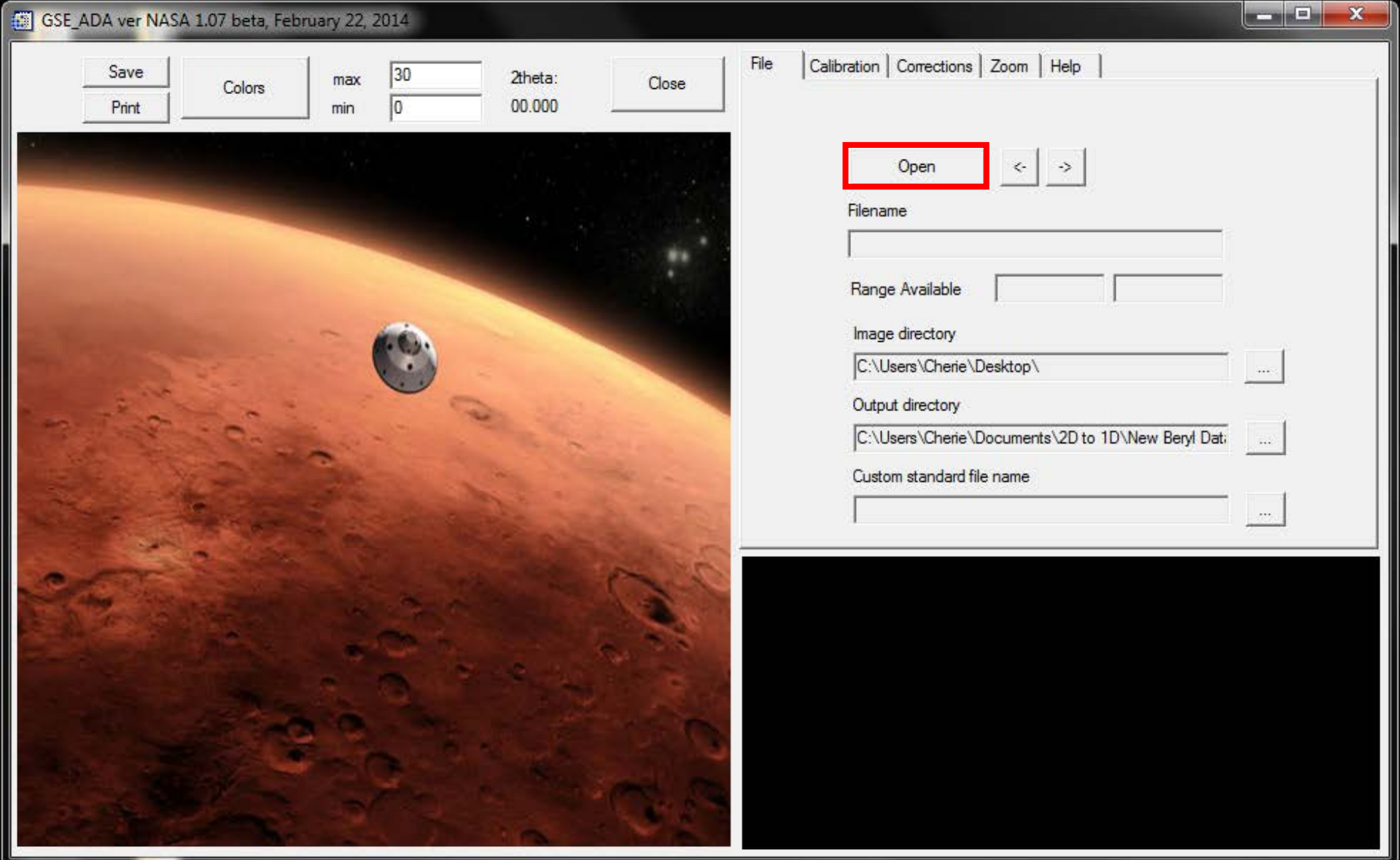
Repeat to remove all spots



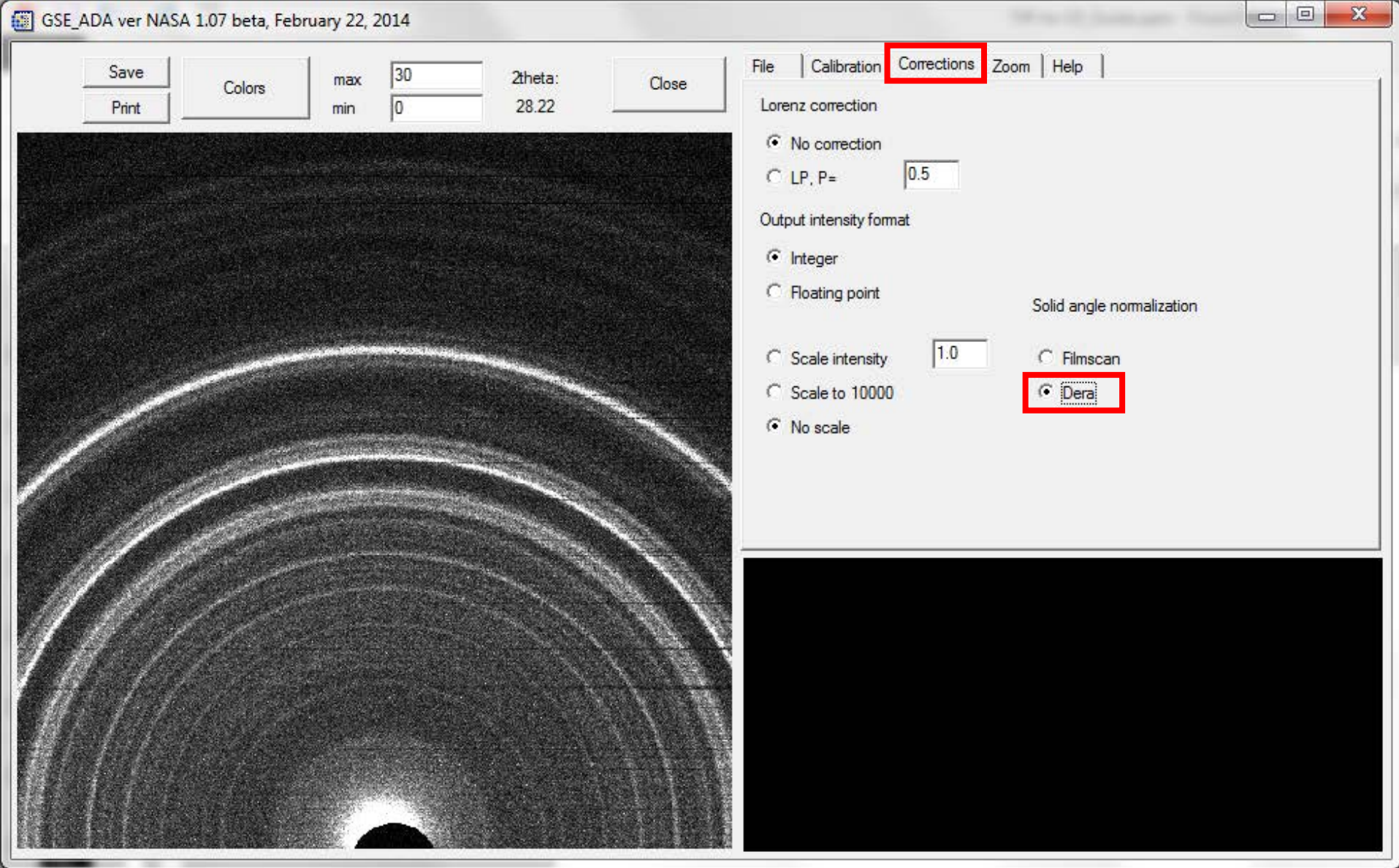
Save the “no spot” version of the image

# 2D to 1D Conversion

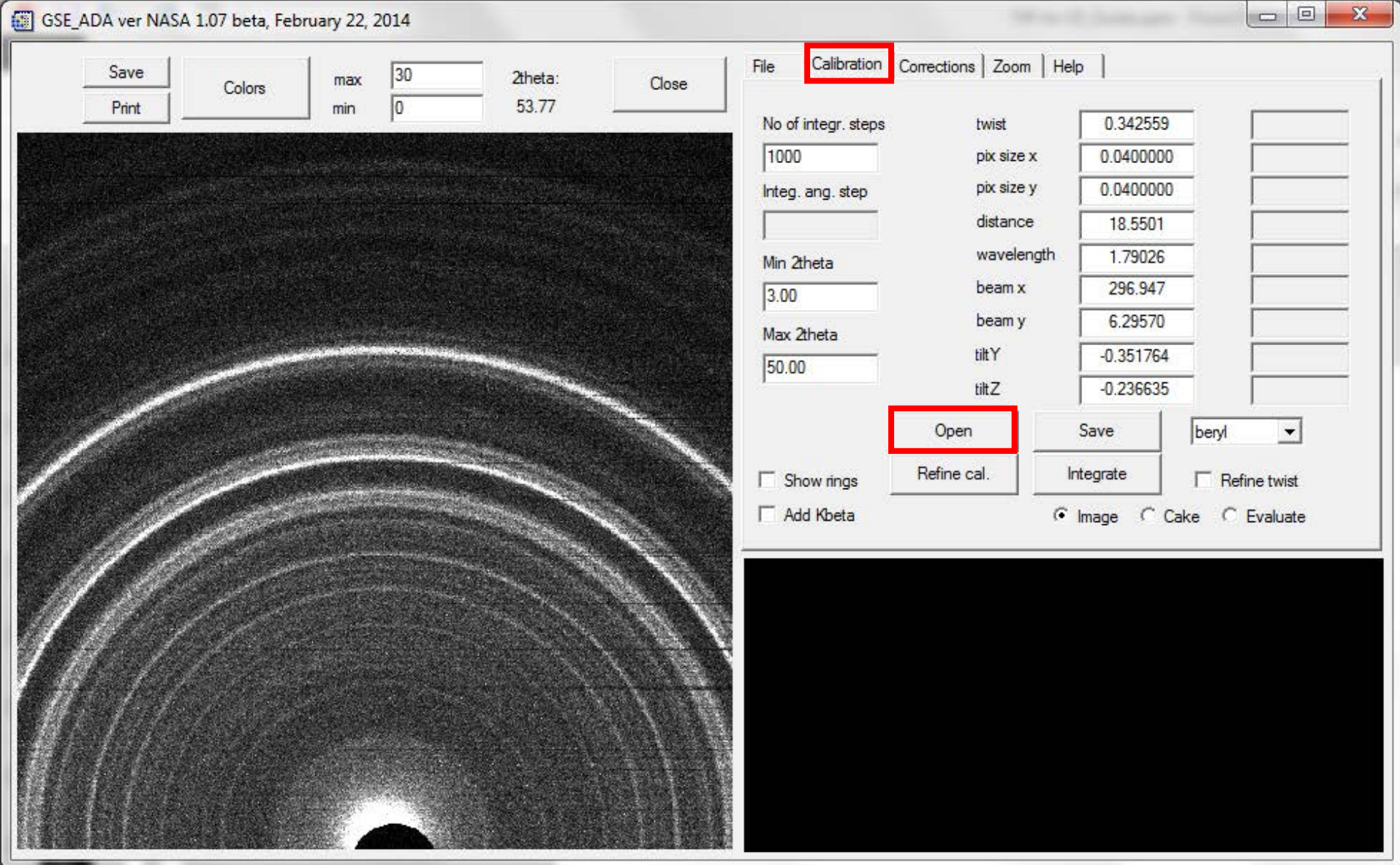
Dera 1.07



Open the tiff summed tiff image



In the “Corrections” tab, change the solid angle normalization from FilmScan to Dera



In the "Calibration" tab open the current calibration file. The most recent calibration file is located on the CheMin wiki and should be saved to your computer.

GSE\_ADA ver NASA 1.07 beta, February 22, 2014

Save Print Colors max 30 min 0 2theta: 50.15 Close

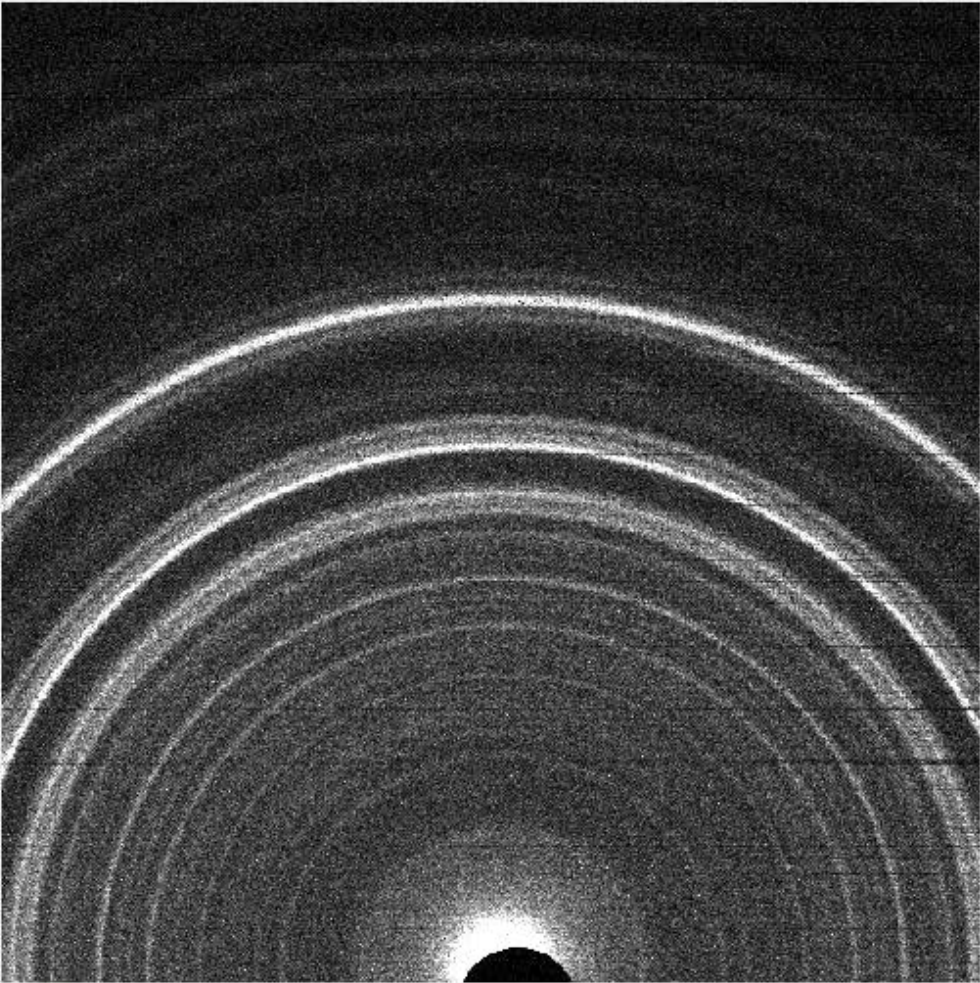
File Calibration Corrections Zoom Help

No of integr. steps 1000 Integ. ang. step Min 2theta 3.00 Max 2theta 52.00

twist 0.342559 pix size x 0.0400000 pix size y 0.0400000 distance 18.5501 wavelength 1.79026 beam x 296.947 beam y 6.29570 tilt Y -0.351764 tilt Z -0.236635

Open Save beryl Refine cal. Integrate  Refine twist

Show rings  Add Kbeta  Image  Cake  Evaluate



In the "Calibration" tab, change Max 2-theta to 52.00 and check the Refine twist box

GSE\_ADA ver NASA 1.07 beta, February 22, 2014

Save Print Colors max 30 min 0 2theta: 50.15 Close

File Calibration Corrections Zoom Help

No of integr. steps 1000 Integ. ang. step Min 2theta 3.00 Max 2theta 52.00

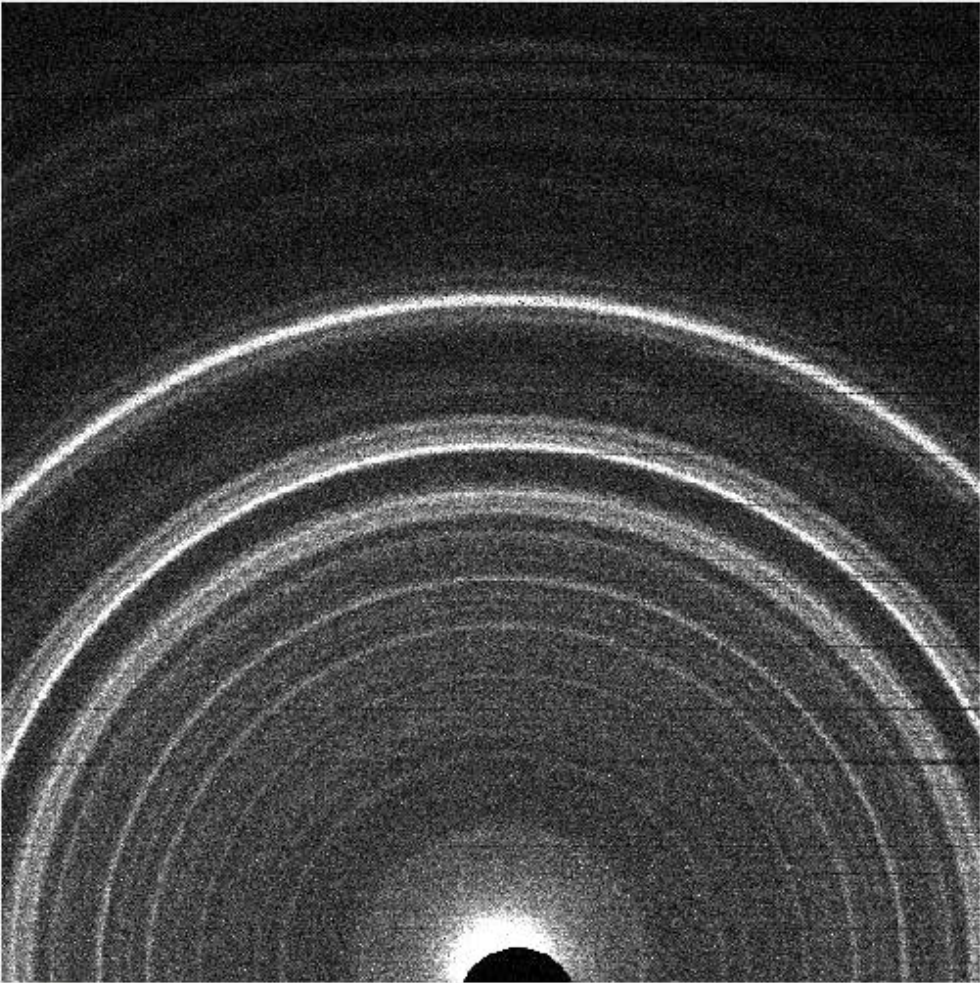
twist 0.342559 pix size x 0.0400000 pix size y 0.0400000 distance 18.5501 wavelength 1.79026 beam x 296.947 beam y 6.29570 tilt Y -0.351764 tilt Z -0.236635

Open Save beryl

Show rings  Add Kbeta  Refine cal.  Refine twist

Image  Cake  Evaluate

**Integrate**



Click the Integrate button and save the file with the extension “.mdi”