

Astra Image Deconvolution Reference

Astra Image 5.2.0.0

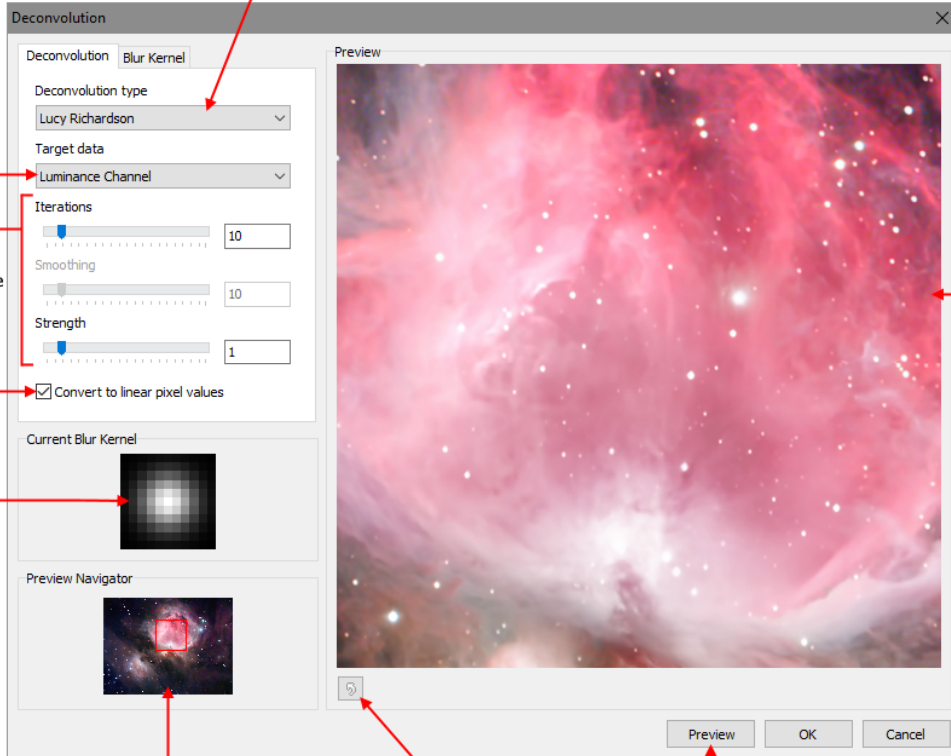
Deconvolution type: choose between one of seven deconvolution methods. Lucy Richardson and Maximum Entropy are best at noise suppression.

Target data: choose between processing the luminance channel, or the RGB channels. Processing the Luminance channel is faster.

Deconvolution settings: basic settings for doing deconvolution. Smoothing and Strength are not available for all deconvolution types.

Convert to linear pixel values: will attempt to undo scaling (such as gamma) before processing.

Current Blur Kernel: shows what the blur kernel looks like with the settings on the Blur Kernel tab.



Preview: shows a before and after region of the image. Can be dragged with the mouse to display any area of the image.

Preview Navigator: drag the red box to an area of interest. The preview will be updated.

Before / After: click and hold this button to toggle between before and after images.

Preview: click this button to start doing deconvolution on the preview image.

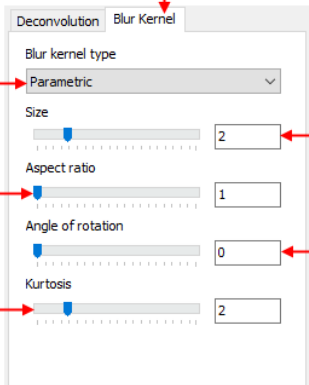
BLUR KERNEL TAB REFERENCE

Blur Kernel tab: Change the settings for the current blur kernel.

Blur kernel type: Either Parametric, good for Gaussian / Cauchy / Moffatt shapes, or Motion Blur for removing linear motion blur.

Aspect ratio: Sets the roundness of parametric blur kernels. 1 is round, 0.5 is oval, 0.1 is flat.

Kurtosis: Sets the shape of the parametric blur kernel wings. 2 is Gaussian.



Size: Sets the sigma (curve width) of parametric blur kernels, or the length of motion blur kernels.

Angle of rotation: Allows a parametric blur kernel with an aspect ratio of less than one to be rotated. Also sets the rotation of motion blur kernels.

GENERAL NOTES

+ In general, the Van Cittert and Jansen Van Cittert deconvolution methods are good at sharpening with few iterations and are relatively fast. The Lucy Richardson, Maximum Entropy and Total Variation methods are good at sharpening and noise suppression but take longer and usually require more iterations.

+ The Kurtosis setting for the blur kernel allows you to finely adjust the shape of a parametric blur kernel curve. A setting of 2.0 will produce a Gaussian shape. Values lower than 2.0 produce a shape with longer wings, while values above 2.0 produce sharper wings.

+ When processing color images, better results are often achieved when using the Convert to linear pixel values option. This will attempt to remove any scaling that was done to the image. Grayscale images, such as FITS files, will usually not benefit from using this option.