

Astro Background Extractor AI V2

Quick guide · Version 2.0

Getting started

Two ways to work

Extraction and editing: load your image, click Extract Background, wait for the result, then adjust the sliders. **Editing only:** load your image, move a slider and confirm Yes in the prompt. Background extraction is optional for this workflow.

Your first image

1. Click Load Image and choose a FITS, TIFF, DNG, JPG or PNG file.
2. Check that GPU is selected in Settings.
3. Click Extract Background. The animated button displays progress; Stop interrupts processing.
4. When processing finishes, After is selected. Adjust Opacity to control the correction strength.
5. Compare the result and click Save Result.

Before you begin

Keep the original file and save your result under a different name. For FITS files, the AI model processes linear data; stretching is used for display and subsequent editing. Processing time depends on image size, hardware and the active backend.

Compare and correct the background

Preview modes

Before displays the source; **After** displays the result. **Split View** uses a draggable divider; **Side by Side** places the views next to each other. Use Fit to Window to fit the image and + or - to zoom. After remains empty until you run extraction or confirm an edit without extraction.

Background Extraction

The single processing method is **AI BACKGROUND**. Opacity controls how much of the estimated correction is applied: 0 preserves the source, while 1 applies the full correction. Adjusting opacity does not require another AI inference.

Gradient Map and Debug

The G and V buttons show the gradient map and vignetting diagnostic view. Export Gradient Map saves the map available after extraction. Border Vignette and Side Vignette adjust the edges and sides. Vignette Midpoint controls the transition extent; its effect is visible when either of the first two controls is nonzero.

Green Cast

Increase Green Cast Removal gradually to reduce excess green. This control does not perform general white balance and should preserve real nebula colours. At zero, its correction is bypassed. You do not need to repeat extraction to try different strengths.

Extraction and Stretch

Stretch and Contrast

Black Point adjusts shadows and Midtones adjusts midtones. MTF and STF help reveal faint signal in linear data. Auto-Stretch Histogram proposes a tonal distribution; Auto Contrast adjusts contrast. Use moderate settings to avoid crushed shadows or excessively bright stars.

Local adjustments

Dynamic Contrast, Shadow Contrast and Dehaze / Clarity improve the visibility of structures and darker areas. Always inspect the result at 100% as well: excessive adjustments can emphasise noise and halos.

Protection and Cleanup

AI Nebula Protection reduces the correction in detected bright structures to help preserve diffuse signal. It does not reconstruct colour and its mask is not perfect. Background Noise Reduction smooths noise; Star Mask Strength and Star Reduction help manage the stellar component. Check that fine details remain natural.

Resetting adjustments

Slider effects are recalculated from the working base rather than repeatedly added to previous results. Return a control to its neutral value to remove its effect. Controls with a neutral centre, such as temperature and tint, are neutral at the centre; Midtones is neutral at 1. Reset Parameters restores the parameters; Reset Image returns to the source.

Color and Details

Global colour

Saturation and Vibrance adjust colour intensity; Temperature and Magenta-Green Tint change the overall colour balance. Make small adjustments while comparing Before and After. Some colour controls are disabled for monochrome images.

HSL

Hue changes colour hue, HSL Saturation changes saturation and Lightness changes colour lightness. Star Defringe reduces coloured fringes around stars. The coloured tracks help illustrate each control.

Selective Colors

Use Select Color to choose the colour range, then adjust Cyan reduction, Magenta, Yellow and Black. Each range keeps its own values, so check the selected range before making changes. This section allows targeted adjustments without shifting the entire palette.

Details

Sharpness and Detail provides controls for stars, structures, texture and halos, together with noise protection, radius and luminance masking. Inspect details at 100% and compare with the source. Use the narrowband filter when it is available for the image type.

Saving, GPU and help

Save your result

Click Save Result and choose an available format and bit depth. For further processing, prefer 16-bit TIFF, 32-bit floating-point TIFF or floating-point FITS. PNG and JPEG can be used for sharing, with the options offered by the save dialog. JPEG uses lossy compression. Export Gradient Map saves the background map rather than the finished image.

Acceleration

On macOS, AI inference uses **CoreML**; on Windows, the implemented GPU backend is **DirectML**. The GPU preference is saved. When CPU fallback is allowed and occurs, a warning is displayed; processing may become much slower. If the requested GPU mode cannot start, check the error message and Settings. There is no direct CUDA backend.

Troubleshooting

Slow processing: check GPU settings and file dimensions; large images require more memory and AI tiles.
Empty After view: run Extract Background, or move a slider and confirm editing without extraction.
Unnatural colour: reduce Green Cast, tint and saturation; compare at neutral settings.
Inactive adjustment: check the image type and any controls on which it depends.

Help and languages

The top ? button opens the welcome window, the bundled manual and version 2.0 release notes. The small ? buttons beside controls explain individual functions. The interface supports Italian, English, Spanish, French, German and Portuguese. This guide is in English. Apple notarization checks the distribution package; it does not certify compatibility with every macOS version.