GraXpert Process for PixInsight Quick Start Guide

www.deepskyforge.com

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- Certified PixInsight Developer

Prerequisites

- <u>PixInsight</u> version 1.8.9-2 build 1597 or higher

1. PixInsight
https://pixinsight.com/
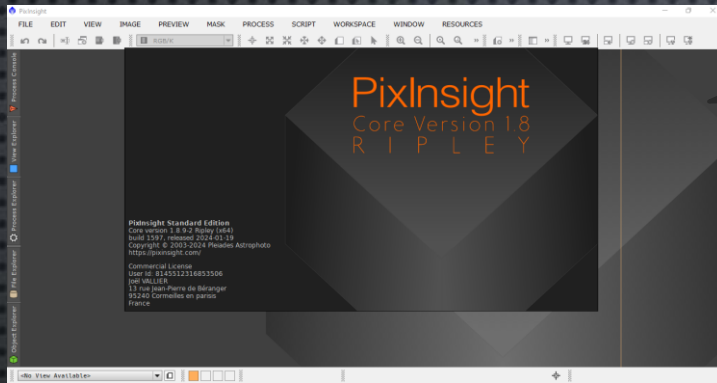
- <u>GraXpert</u> version 3.0.0 or higher

2. GraXpert
https://www.graxpert.com/
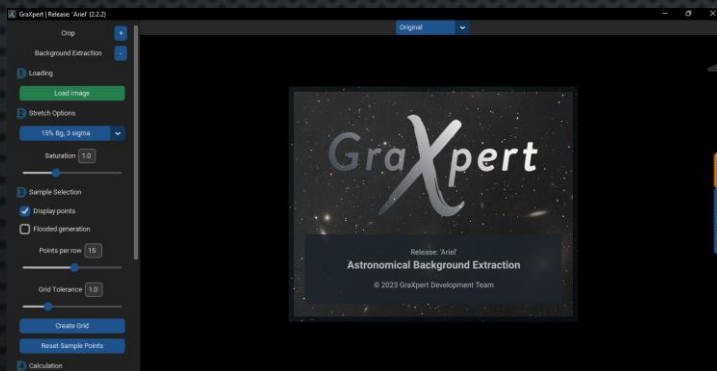
⚠ The signature of the GraXpert Process won't be recognized with a PixInsight version lower than the recommended version.

✓ After installation, make sure that the GraXpert User Interface is working fine.

✓ Process an image in AI mode through the GraXpert user interface to trigger the download of the default AI models.

✓ You can load multiple AI models if needed, but generally, only the latest one is useful.

✓ GraXpert Process will display all locally available AI models after downloading.

PixInsight

- **PixInsight** is both astrophotography image processing software and a software platform that allows developers to introduce new features through scripts and modules.

- **PixInsight** has implemented a mechanism for signing modules and scripts to secure its platform. It is strongly advised not to install unsigned scripts or modules.

- **PixInsight** Forum is dedicated to PixInsight support and should not be considered as a support forum for scripts or modules developed on this platform.

- Please respect this rule...

✓ Please report any issues related to the GraXpert Process on my support website or via email (see references section).

✓ Do not use the PixInsight forum or PixInsight support for this purpose.

GraXpert

- **GraXpert** is an open-source software designed to remove gradients from astrophotos caused by external interferences such as light pollution.

- **GraXpert** enhances the aesthetics of deep-sky photos, simplifies post-processing, and enables the removal of color dominances.

- **GraXpert** operates independently and exclusively dedicated to this task.

- You can join the GraXpert community on Discord [Dark Matters](.).

✓ The software can be downloaded from their GitHub [Steffenhir/GraXpert](.).

Features GraXpert Process for PixInsight

- **AI Background Extraction** with full control of parameters (smoothing, correction mode and AI model version).

- **AI Denoising** with full control of parameters (strength, batch size for performances optimization and AI model version).

- **Realtime preview** (restricted to denoising).

- **Export PixInsight photography** to GraXpert user interface.

- **Import GraXpert processed photography** into PixInsight.

- **Create** new image or **replace** active image.

- **Restore photography metadata** after AI processing.

- **Display GraXpert logs** into PixInsight console.

GraXpert Process Installation

> ⚠️ Don't forget the "/" at the end of the installation URL.
> ✓ Process is compatible with Windows, MacOS, and Linux platforms.

1. Go to **PixInsight ► RESOURCES ► Updates ► Manage Repositories**.
2. Click "**Add**" and enter the URL
   https://pixinsight.deepskyforge.com/update/graxpert-process/
3. Click "**Ok**".
4. Go to **PixInsight ► RESOURCES ► Updates ► Check for updates**.
5. PixInsight should display GraXpert Process package,
6. Click on "**Apply**".
7. PixInsight should confirm the loading of updates; click "**Ok**".
8. Exit PixInsight and confirm the installation of updates.
9. PixInsight will restart and install the packages.
10. GraXpert process can be found under menu **PROCESS ► <Etc>**

GraXpert Process after installation

GraXpert Dialog Box

⚠ Realtime preview is restricted to denoising.

1. Background Extraction and related parameters

2. Denoising and related parameters

3. GraXpert User Interface launching

4. Global parameters

5. Standard bottom line actions: Process Icon, Apply, Realtime Preview, Documentation, Reset parameters…

GraXpert

☑ **Background Extraction**

Smoothing: 0.000

Correction: Subtraction   ☐ Show background

AI model: 1.0.1

☐ **Denoising**

Strength: 1.000

Batch size: 4

AI model: 1.0.0

User Interface

↪ Export   🖥 Launch   ↪ Import

Global Parameters

☐ Replace image   ☐ Show GraXpert logs

GraXpert Console Logs
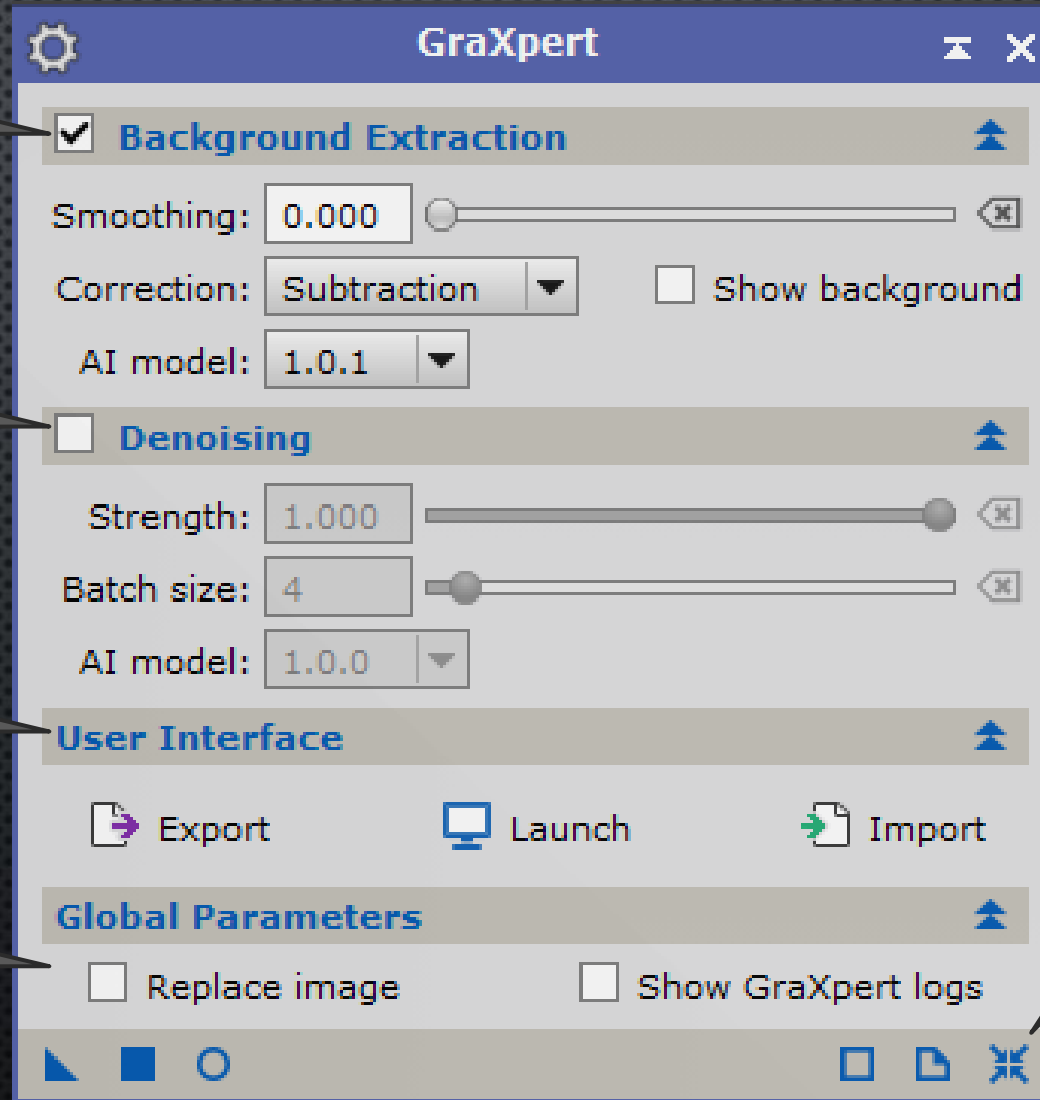
The console window shows:

```
Process Console   RGB 1:7 M31 | M31.fit

RGB(1:7 GraXpert_background_extraction( -)

PixInsight Core 1.8.9-2 Ripley (x64) (build 1605 | 2024-03-23)
Copyright (c) 2003-2024 Pleiades Astrophoto

Welcome to PixInsight. Started 2024-04-20T06:19:39.801Z

* Parallel processing enabled: Using 4 logical processors.
* WebView: Using raster-only graphics.

Reading 1 image(s):
C:/Users/Joel/Downloads/M31.fit
** Warning: Deprecated format: FITS
358 FITS keywords extracted
Reading FITS image: 32-bit floating point, 3 channel(s), 3001x3000 pixels: done

GraXpert: Processing view: M31
Writing image: w=3001 h=3000 n=3 RGB Float32
Mode background extraction
Status: Completed
Running time: 6.369 seconds
Loading image 'image': w=3001 h=3000 n=3 RGB Float32
1 image property
Restore 358 propertie(s)
GraXpert successfully completed
8.953 s

Ready                                    Pause/Abort
```

⚠ The first execution may take time if you have never loaded the AI model.

✓ GraXpert Process takes care of restoring astrometric data after AI processing.

✓ In case of any issues, all GraXpert logs will be displayed in the console.

✓ If support is requested, please activate option "Show GraXpert logs" and send a copy of the console.

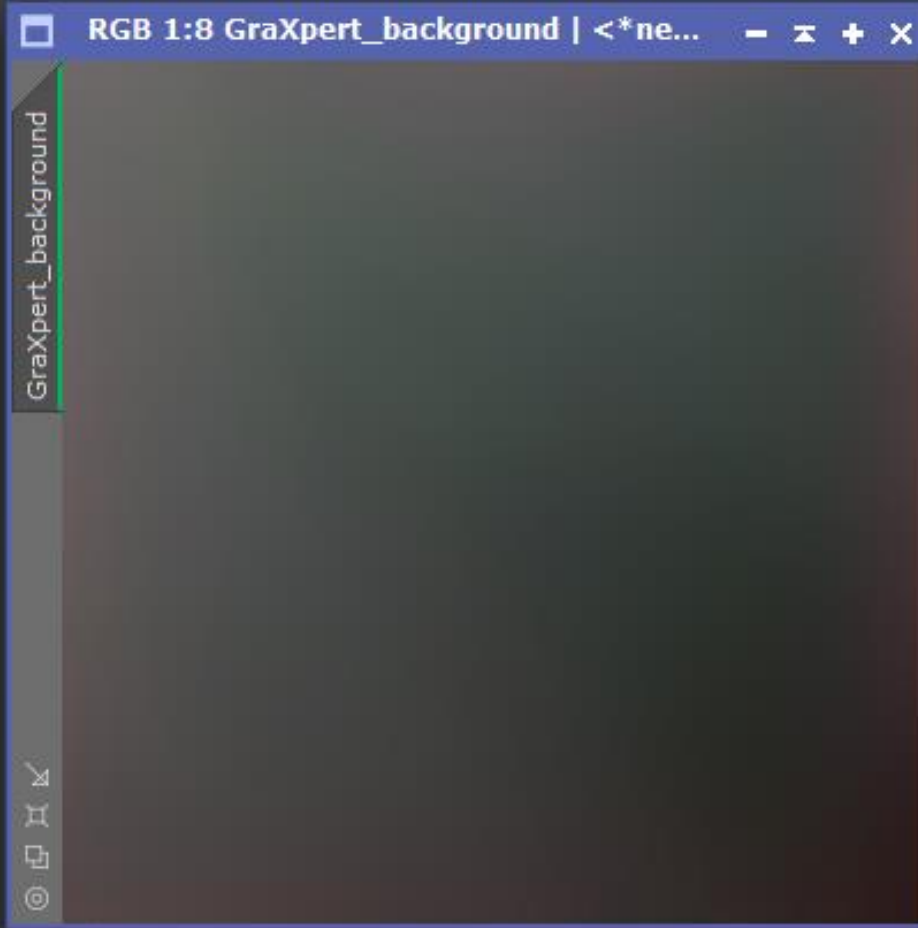1. You can stop GraXpert processing at any time.

Display processed images

1. Processed image
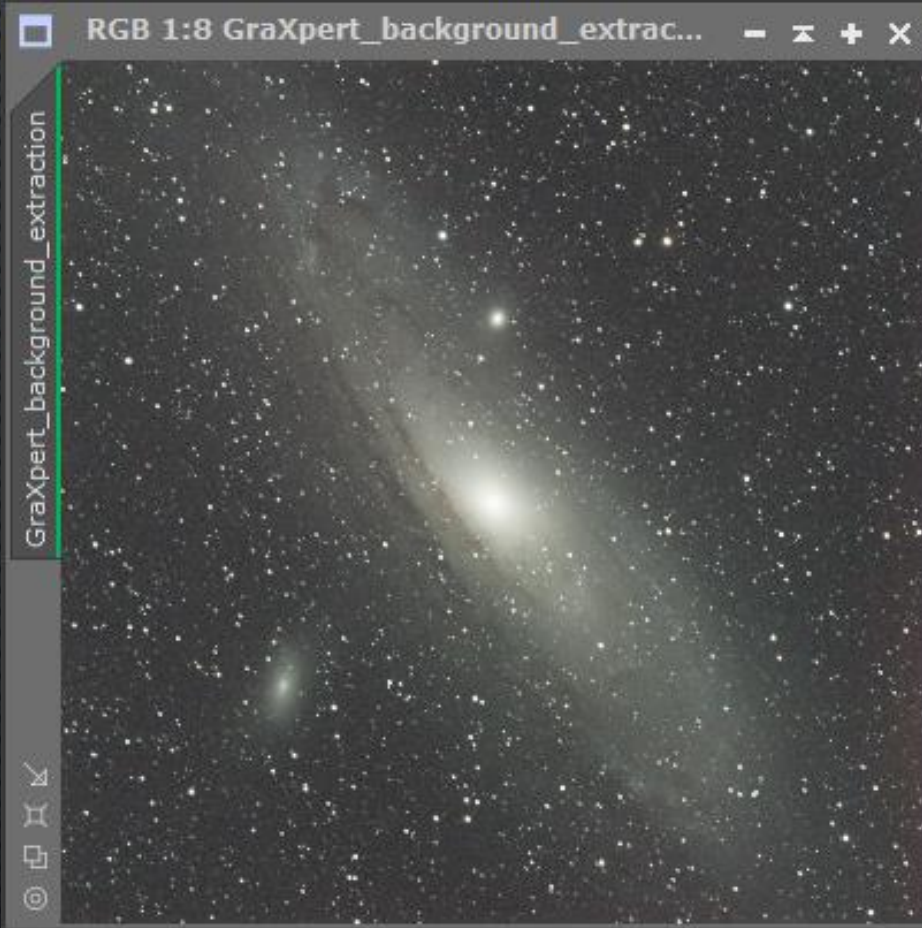
2. Gradient

- ✓ The display of the gradient is optional.
- ✓ You can choose to replace the original view or create a new one.
- ✓ If Screen Transfer was activated on the original photo, it will be applied to the processed view.

References

- **Website**
  - https://www.deepskyforge.com
  - Email: contact@deepskyforge.com

- **Discussions**
  - https://github.com/DeepSkyForge/GraXpert4PixInsight/discussions

- **Support**
  - https://github.com/DeepSkyForge/GraXpert4PixInsight/issues

- **Packages for PixInsight install**
  - https://pixinsight.deepskyforge.com/update/graxpert-process/
  - DON'T FORGET THE TRAILING SLASH "/"

⚠️ No need to contact PixInsight support in case of issues with GraXpert Process or the GraXpert user interface.
✓ Please contact the support related to the module itself.

Technical information Windows platform

- ## Default path to GraXpert

  - *C:\Users\<NAME>\AppData\Local\Programs\GraXpert\GraXpert.exe*

  - Another possibility: *C:\Program Files\GraXpert\GraXpert.exe*

- ## Preferences, AI models and GraXpert Logs

  - C:\Users\<NAME>\AppData\Local\GraXpert\GraXpert\preferences.json

  - C:\Users\<NAME>\AppData\Local\GraXpert\GraXpert\ai-models\

  - C:\Users\<NAME>\AppData\Local\GraXpert\GraXpert\Logs\graxpert.log

- ## Preferences and parameters GraXpert Suite for PixInsight

  - C:\Users\<NAME>\AppData\Local\GraXpert4PixInsight\preferences.cfg

  - C:\Users\<NAME>\AppData\Local\GraXpert4PixInsight\path.cfg

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✓ You can modify the path to GraXpert during its installation.

✓ You can install multiple versions of GraXpert, but they will all use the same preference file, which can potentially cause issues or confusion.

✓ You can delete the directories \AppData\Local\GraXpert or \AppData\Local\GraXpert4PixInsight to force a reset to default settings.

✓ The download of the AI model is done by GraXpert during the first image processing in AI mode. This may take several minutes.

Technical information macOS platform

- ## Default path to GraXpert

  - */Applications/GraXpert.app/Contents/MacOS/GraXpert*

- ## Preferences, AI models and GraXpert Logs

  - /Users/<NAME>/Library/Application Support/GraXpert/preferences.json

  - /Users/<NAME>/Library/Application Support/GraXpert/ai-models/

  - */Users/<NAME>/Library/Application Support/GraXpert/Logs/graxpert.log*

- ## Preferences and parameters GraXpert Suite for PixInsight

  - /Users/<NAME>/Library/Application Support/GraXpert4PixInsight/preferences.cfg

  - /Users/<NAME>/Library/Application Support/GraXpert4PixInsight/path.cfg

✓ You can modify the path to GraXpert during its installation.

⚠ You can install multiple versions of GraXpert, but they will all use the same preference file, which can potentially cause issues or confusion.

✓ You can delete the directories <TBC> or <TBC> to force a reset to default settings.

✓ The download of the AI model is done by GraXpert during the first image processing in AI mode. This may take several minutes.

Technical information Linux platform

- ## Default path to GraXpert

  - *Recommended: /opt/bin/ with symbolic link in /usr/bin/*

  - Symbolic link creation: sudo In -s /opt/GraXpert/GraXpert /usr/bin/graxpert

- ## Preferences, AI models and GraXpert Logs

  - */home/<NAME>/.local/share/GraXpert/GraXpert/preferences.json*

  - */home/<NAME>/.local/share/GraXpert/ai-models/*

  - */home/<NAME>/.local/share/GraXpert/Logs/graxpert.log*

- ## Preferences and parameters GraXpert Suite for PixInsight

  - */home/<NAME>/.local/share/GraXpert4PixInsight/preferences.cfg*

  - */home/<NAME>/.local/share/GraXpert4PixInsight/path.cfg*

✓ You can modify the path to GraXpert during its installation.
⚠ You can install multiple versions of GraXpert, but they will all use the same preference file, which can potentially cause issues or confusion.
✓ You can delete the directories <TBC> or <TBC> to force a reset to default settings.
✓ The download of the AI model is done by GraXpert during the first image processing in AI mode. This may take several minutes.

Certified PixInsight Developer

- GraXpert process is released under Certified PixInsight Developer ID JoelVallier

- If you encounter certificate error during installation please
  - Make sure you are using PixInsight 1.8.9-2 build 1597 or higher.
  - Type the command 'lscpd' in the PixInsight console.
  - Check if my certificate (JoelVallier) is present.

- Contact me through support or via email (see section References).

⚠️ No need to contact PixInsight support. ⚠️

END