

# GraXpert Suite for PixInsight Quick Start Guide

[www.deepskyforge.com](http://www.deepskyforge.com)

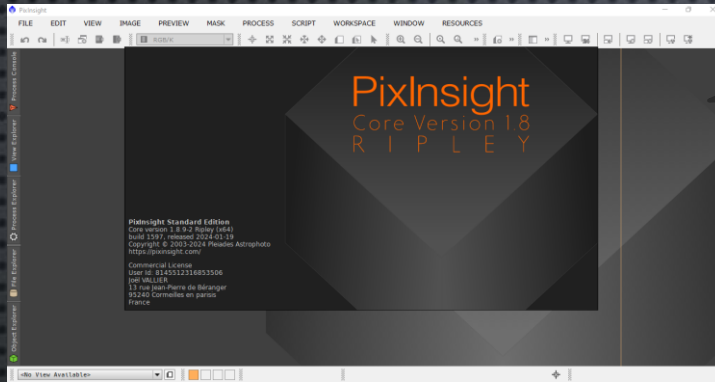
Joël VALLIER

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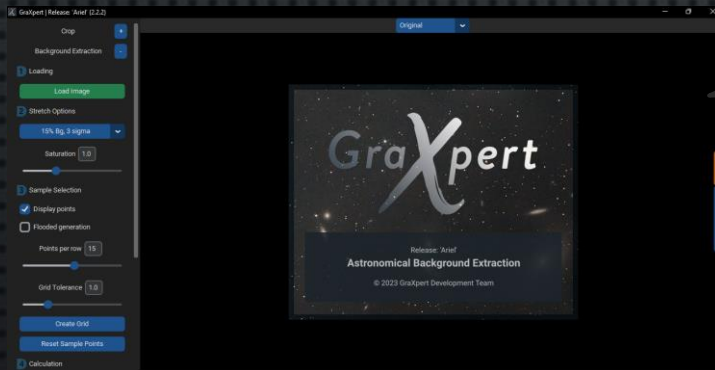
# Prerequisites

- PixInsight version 1.8.9-2 build 1597 or higher



1. PixInsight  
<https://pixinsight.com/>

- GraXpert version 2.2.1 or higher



2. GraXpert  
<https://www.graxpert.com/>

⚠ Note the GraXpert installation path for later use. ⚠

- ⚠ The signature of the GraXpert Suite script will not be recognized with a version lower than the recommended minimum version.
- ✓ After installation, make sure that the GraXpert Graphical User Interface is functional.
- ✓ Process an image in AI mode through the graphical interface to trigger the download of the default AI model.
- ✓ You can load multiple AI models if needed, but generally, only the latest one is useful.
- ✓ GraXpert Suite will display all locally available AI models after downloading.



# PixInsight

- **PixInsight** is both astrophotographic 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 Suite script on my support website or via email (see references section).
- ✓ Do not use the PixInsight forum or 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](#).



## 2 Packages GraXpert Suite

### GraXpert All in One

All features.

Good start point.

### PixInsight Install URL

<https://pixinsight.deepskyforge.com/update/graxpert/>

### GraXpert Suite

All features.

Shortcuts via a dedicated submenu.

Recommended for accessing the Graphical Interface..

### PixInsight Install URL

<https://pixinsight.deepskyforge.com/update/graxpert-suite/>



Don't forget the "/" at the end of the installation URL.

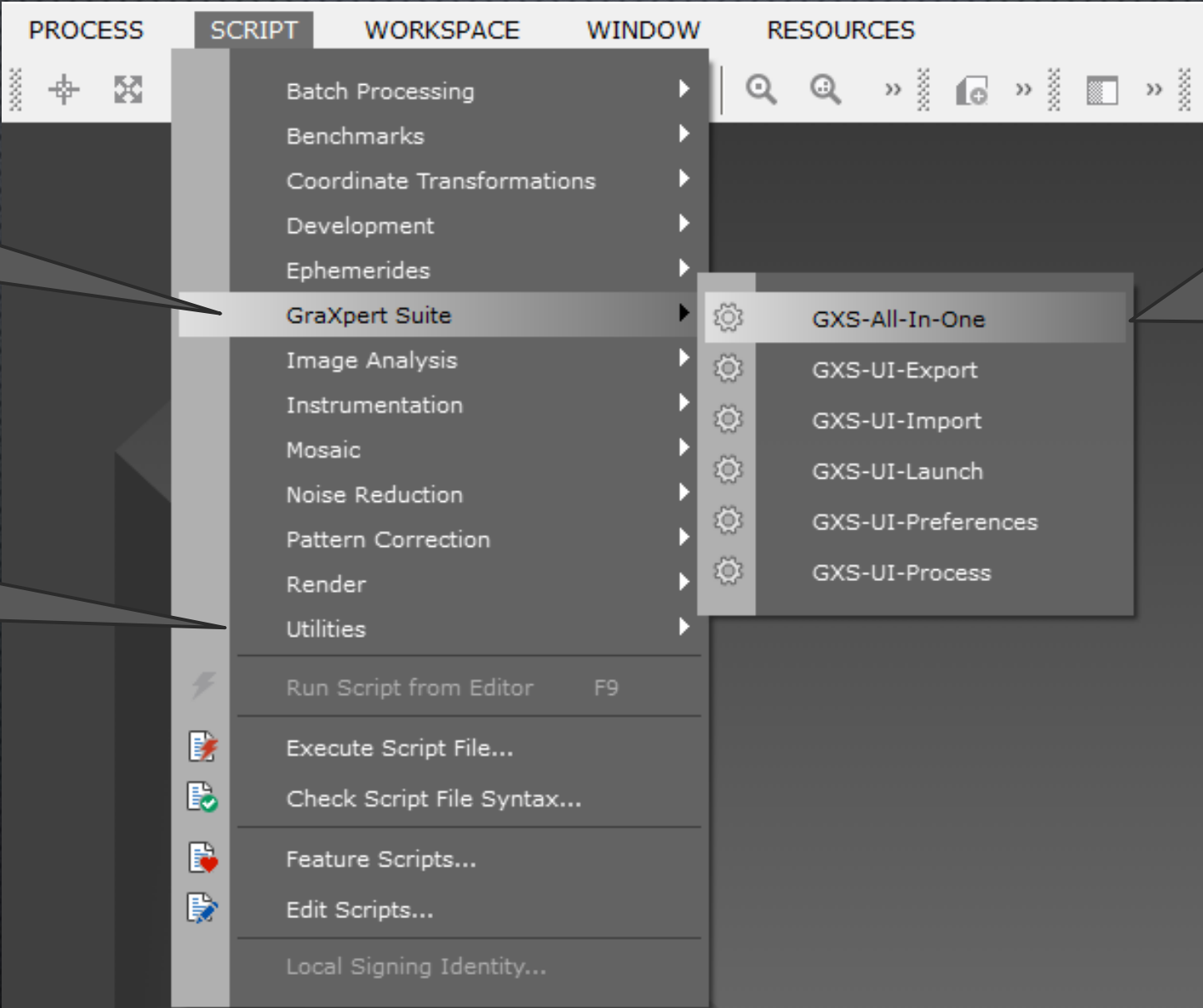
✓ Compatible Windows, MacOS, and Linux

### Standard install

1. Start by navigating to PixInsight > RESOURCES > Updates > Manage Repositories.
2. Click on "Add" and enter one of the two URLs above, then click Ok.
3. Next, go to PixInsight > RESOURCES > Updates > Check for updates.
4. PixInsight should display the selected GraXpert Suite package; click on Apply.
5. PixInsight should confirm the loading of updates; click Ok.
6. Exit PixInsight and confirm the installation of updates.
7. PixInsight will restart and install the packages.

Next

# Scripts GraXpert Suite installed



It is possible to install both packages, provided that you keep them synchronized in terms of version.

1. GraXpert Suite submenu.

3. GraXpert-All-In-One here in Utilities.

2. Shortcuts to All-In-One, UI Export, Import, Launcher, Preferences et Reprocess.





# First launch

## GraXpert All in One

Link to GitHub  
(Support)

1. Select the view  
to process

3. Or simply drag  
and drop the view

GraXpert (All in One)

**GraXpert (All in One) version v1.2.1**  
GraXpert is an astronomical image processing program for extracting and removing gradients from the background of your astrophotos.  
[Visit GitHub GraXpert Suite for PixInsight](#)

☐ masterLight\_BIN\_1\_3008x3008\_EXPOSURE\_300\_00s\_FILTER\_

▼

Correction: 

Subtraction

 ▼

Smoothing: 

0.000

⌵

☒ Create new image ☒ Create background model

GraXpert UI

▲

Export / Import

Preferences

Reprocess

Advanced Parameters

☐ Debug GraXpert 

Set path

AI version: 

1.0.1

 ▼

Execute

Cancel

- ✓ Make sure to have an image open before running the script.
- ⚠ Upon the first execution, the script will prompt you for the GraXpert's path.

2. Click on Execute

Next

## Follow the execution in the PixInsight console...

1. You have a  
summary of  
GraXpert's  
execution  
parameters.

1. The GraXpert  
execution status  
will be displayed  
here, followed by  
other processing  
information.

```
Processing: JavaScript Runtime
Processing script file: C:/Program Files/PixInsight/src/scripts/
GraXpertSuite/GraXpertAllInOne.js
* Code signature verified:
script-id      : GraXpertAllInOne
developer-id   : JoelVallier
timestamp      : 2024-01-27T12:04:59.837Z

Loading parameters:
Parameters Ok

Writing file:
C:/Users/Joel/AppData/Local/Temp/Pix.xisf
Writing image: w=3001 h=3000 n=3 RGB Float32
ICC profile embedded: 'sRGB IEC61966-2.1', 3024 bytes
1 image property embedded

Run GraXpert:
Exec: C:/Users/Joel/AppData/Local/Programs/GraXpert/GraXpert.exe
Input:  C:/Users/Joel/AppData/Local/Temp/Pix.xisf
Output: C:/Users/Joel/AppData/Local/Temp/Pix_GraXpert.xisf
Background: C:/Users/Joel/AppData/Local/Temp/
Pix_GraXpert_background.xisf
Debug: Off
Interpolation: AI
AI model: 1.0.1
Smoothing: 0
Correction: Subtraction
Status: /

Running
```

- ⚠ The first execution may take some time if you have never loaded the AI model.
- ✓ GraXpert Suite takes care of restoring astrometric data after processing.
- ✓ In case of any issues, all GraXpert logs will be displayed in the console.
- ✓ If support is requested, please send a copy of the console.

2. You can stop  
the execution at  
any time.

Next

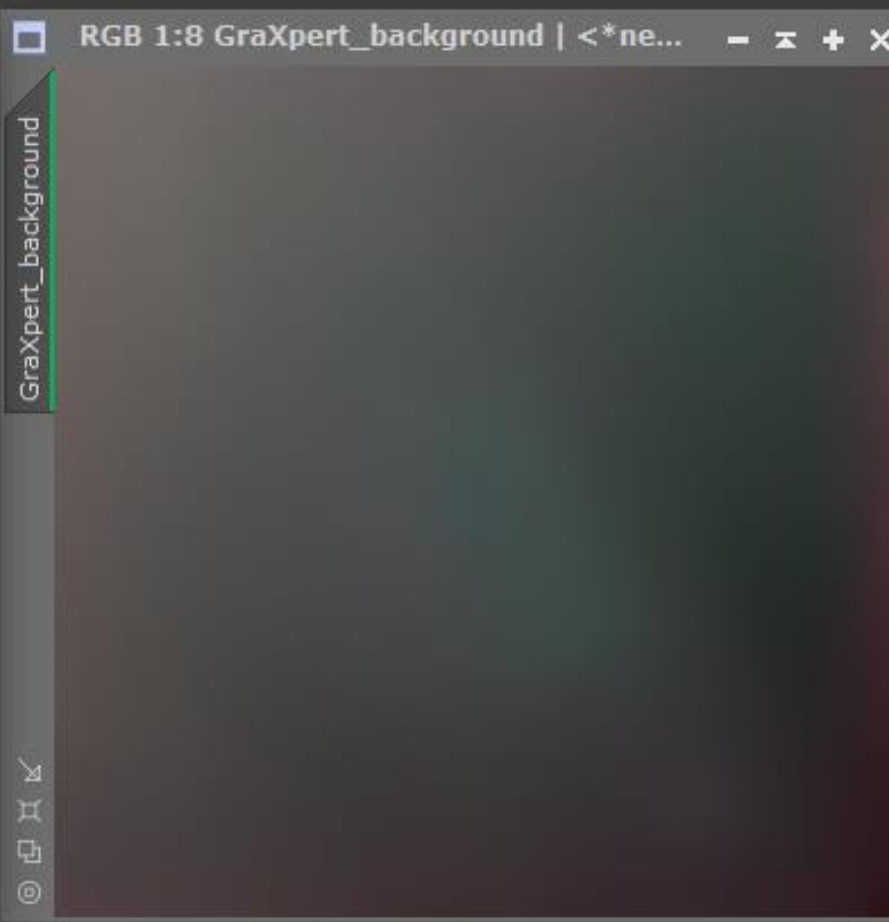


# Display of the result

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 has been activated on the original photo, it will also be applied to the processed view.

Next

# Processing parameters

1. Setting for the AI mode: Correction and Smoothing.

2. Selection of views to display.

3. Display and selection of the AI model.

4. Saving the configuration.

GraXpert (All in One)

GraXpert (All in One) version v1.2.1

GraXpert is an astronomical image processing program for extracting and removing gradients from the background of your astrophotos.

[Visit GitHub GraXpert Suite for PixInsight](#)

☐ masterLight\_BIN\_1\_3008x3008\_EXPOSURE\_300\_00s\_FILTER\_

▼

Correction: 

Subtraction

 ▼

Smoothing: 

0.000

⌵

☒ Create new image

☒ Create background model

GraXpert UI

▲

Export / Import

Preferences

Reprocess

Advanced Parameters

▲

☐ Debug GraXpert

Set path

AI version: 

1.0.1

 ▼

Execute

Cancel

- ✓ Your settings will be automatically saved each time processing is launched.
- ✓ In AI mode, it is recommended to start with a smoothing value of 0.
- ✓ Launch the GraXpert UI to load other AI models.



5. Reset the smoothing to its default value.

6. Resetting the parameters to their default values.


Next




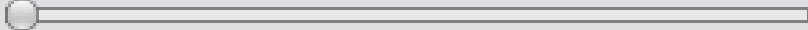

# Advanced settings

 GraXpert (All in One) 


**GraXpert (All in One) version v1.2.1**  
GraXpert is an astronomical image processing program for extracting and removing gradients from the background of your astrophotos.  
[Visit GitHub GraXpert Suite for PixInsight](#)






☐ masterLight\_BIN\_1\_3008x3008\_EXPOSURE\_300\_00s\_FILTER\_ 


Correction:  


Smoothing:   


☒ Create new image ☒ Create background model


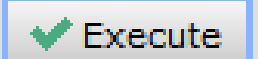


**GraXpert UI** 

Export / Import    Preferences  Reprocess 

**Advanced Parameters** 

☐ Debug GraXpert 

AI version:  



In case of issues, it is recommended to enable debug mode to analyze and, if necessary, provide a copy of the console to support.

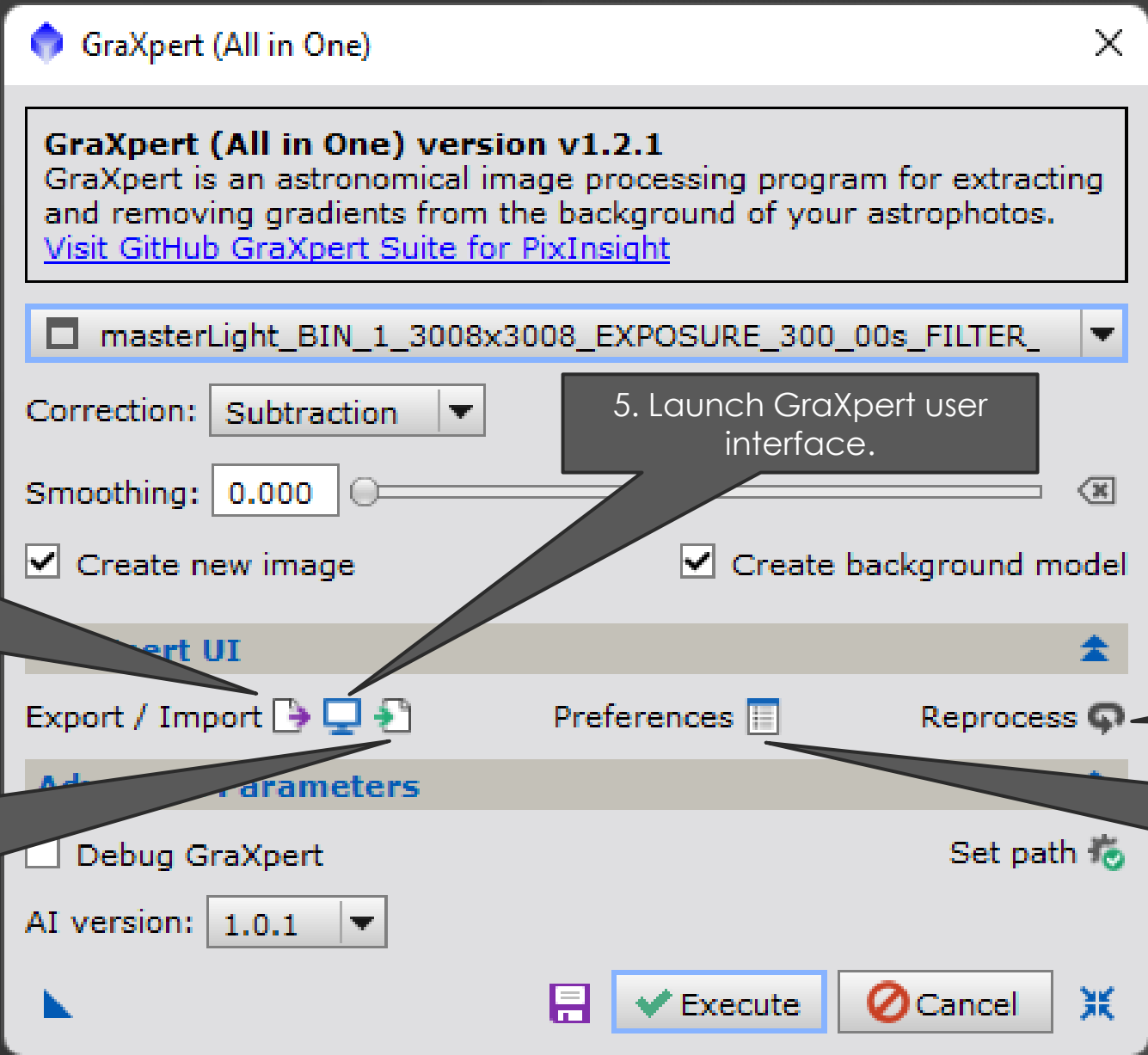
- ✓ A red exclamation point on the "Set path" icon appears when the path to GraXpert is not filled in or is no longer valid.

1. Activate debug mode for more information in the console during processing.

2. You can set or change the path to GraXpert.

Next

# Launching GraXpert user interface



1. Open the active image in the GraXpert user interface.

2. Import the result of the GraXpert processing into PixInsight.

5. Launch GraXpert user interface.

4. Automatic reprocessing.

3. Quick display of GraXpert preferences in the PixInsight console.

! After processing in GraXpert, save the processed image and the gradient (optional), making sure to keep the default names.

- ✓ A red exclamation point on the preferences icon will appear if they are not compatible with a new automatic processing.
- ✓ Retreatment is useful if you want to change the smoothing.

Next



# Displaying GraXpert preferences

(Debug mode activated)

1. Lines without a cross do not affect the processing.

2. The lines marked with a cross are the parameters that impact the processing.

3. Example of preferences incompatible with reprocessing.

```
Process Console
Processing script file: C:/Program Files/PixInsight/src/scripts/
GraXpertSuite/GraXpertAllInOne.js
* Code signature verified:
script-id   : GraXpertAllInOne
developer-id : JoelVallier
timestamp   : 2024-01-27T12:04:59.837Z

Loading parameters:
Parameters Ok

GraXpert UI Preferences and PixInsight Parameters:
Path: C:/Users/Joel/AppData/Local/GraXpert/GraXpert/preferences.json
[ ] Stretch Options: 15% Bg, 3 sigma
[ ] Saturation: 1
[ ] Display points: true
[ ] Flooded generation: false
[ ] Points per row: 15
[ ] Grid Tolerance: 1
[x] Grid: 1 points
[x] Interpolation method: RBF
[x] Smoothing: 0
[ ] Saving: 32 bit Tiff
[ ] Sample size: 25
[ ] Sample color: 55
[x] RBF Kernel: thin_plate
[x] Spline order: 3
[x] Correction: Subtraction
[ ] Language: null
[ ] Scaling: 1
[x] AI version: 1.0.1
[ ] Working directory: C:/Users/Joel/AppData/Local/Temp
[x] Width: 3001
[x] Height: 3000

Ready [Pause/Abort]
```

```
GraXpert UI Preferences and PixInsight Parameters:
Path: C:/Users/Joel/AppData/Local/GraXpert/GraXpert/preferences.json
[x] Grid: 0 points (16 points required for Splines interpolation)
[x] Interpolation method: Splines
[x] Smoothing: 0
[x] RBF Kernel: thin_plate
[x] Spline order: 3
[x] Correction: Subtraction
[x] AI version: 1.0.1
[x] Width: 3001
[x] Height: 3000
Process a photo in GraXpert UI to set compatible preferences.
```

- ✓ In non-debug mode, only the lines marked with a cross are displayed.
- ✓ A purple line indicates a parameter different from PixInsight.
- ✓ The PixInsight value will be taken into account.
- ⚠ A red line indicates a parameter incompatible with reprocessing.
- ✓ During reprocessing, only the Correction and Smoothing parameters can be modified.
- ✓ To change GraXpert preferences, you must launch the GraXpert user interface and process/save a photo.

Next

# Drag and drop and Process Icon

1. Initiate processing by a simple drag and drop.

2. Create a process icon by simply dragging and dropping.

3. Apply the process icon to the image.

- ✓ A double-click on the process icon will open the parameter window.
  - ✓ You can manually modify the parameters, but you will need to clear the MD5 checksum field.
  - ✓ It is possible to open the GraXpert Suite dialogue window from the process icon by right-clicking and selecting "Execution in the global context".
- ⚠ In this case, the parameter settings will be saved in the GraXpert Suite preferences, not in the process icon.

Next



# References

- **Website**

- <https://www.deepskyforge.com>
- Email: [contact@deepskyforge.com](mailto:contact@deepskyforge.com)

- **GitHub**

- <https://github.com/DeepSkyForge/GraXpertSuite4PixInsight>

- **Support**

- <https://github.com/DeepSkyForge/GraXpertSuite4PixInsight/issues>

- **Packages for manual install**

- GraXpert All in One:
  - <https://pixinsight.deepskyforge.com/update/graxpert/GraXpertSuite.zip>
- GraXpert Suite:
  - <https://pixinsight.deepskyforge.com/update/graxpert-suite/GraXpertSuite.zip>



No need to contact PixInsight support in case of issues with GraXpert Suite or the GraXpert user interface.

- ✓ Please contact the support related to the script itself.



# Technical information under Windows

- **Default path to GraXpert (v2.2.1)**

- `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`

- ✓ 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 under MacOS

- **Default path to GraXpert (v2.2.1)**

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

- **Preferences, AI models and GraXpert Logs**

- */Users/<NAME>/Library/Application Support/GraXpert/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 under Linux

- **Default path to GraXpert (v2.2.1)**

- *<To be completed>*

- **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**

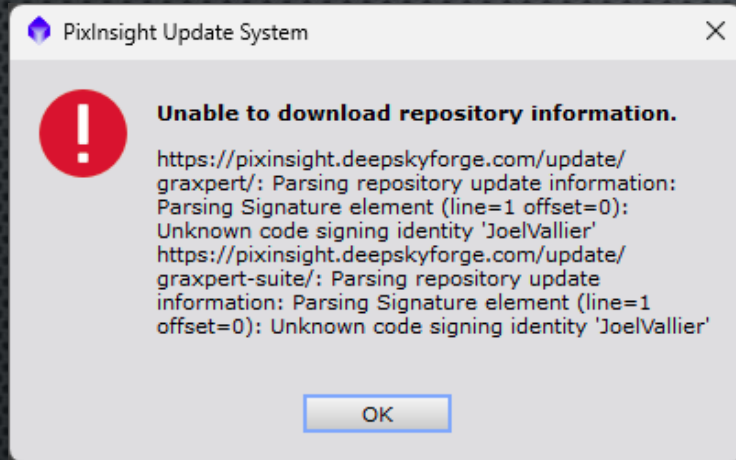
- */home/<NAME>/local/share/GraXpert4PixInsight/preferences.cfg*
- */home/<NAME>/local/share/GraXpert4PixInsight/path.cfg*

- ✓ 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.



# Certificate issue

- If you encounter this type of error during installation:



- 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.
- ⚠ There is no need to contact PixInsight support. ⚠

**END**