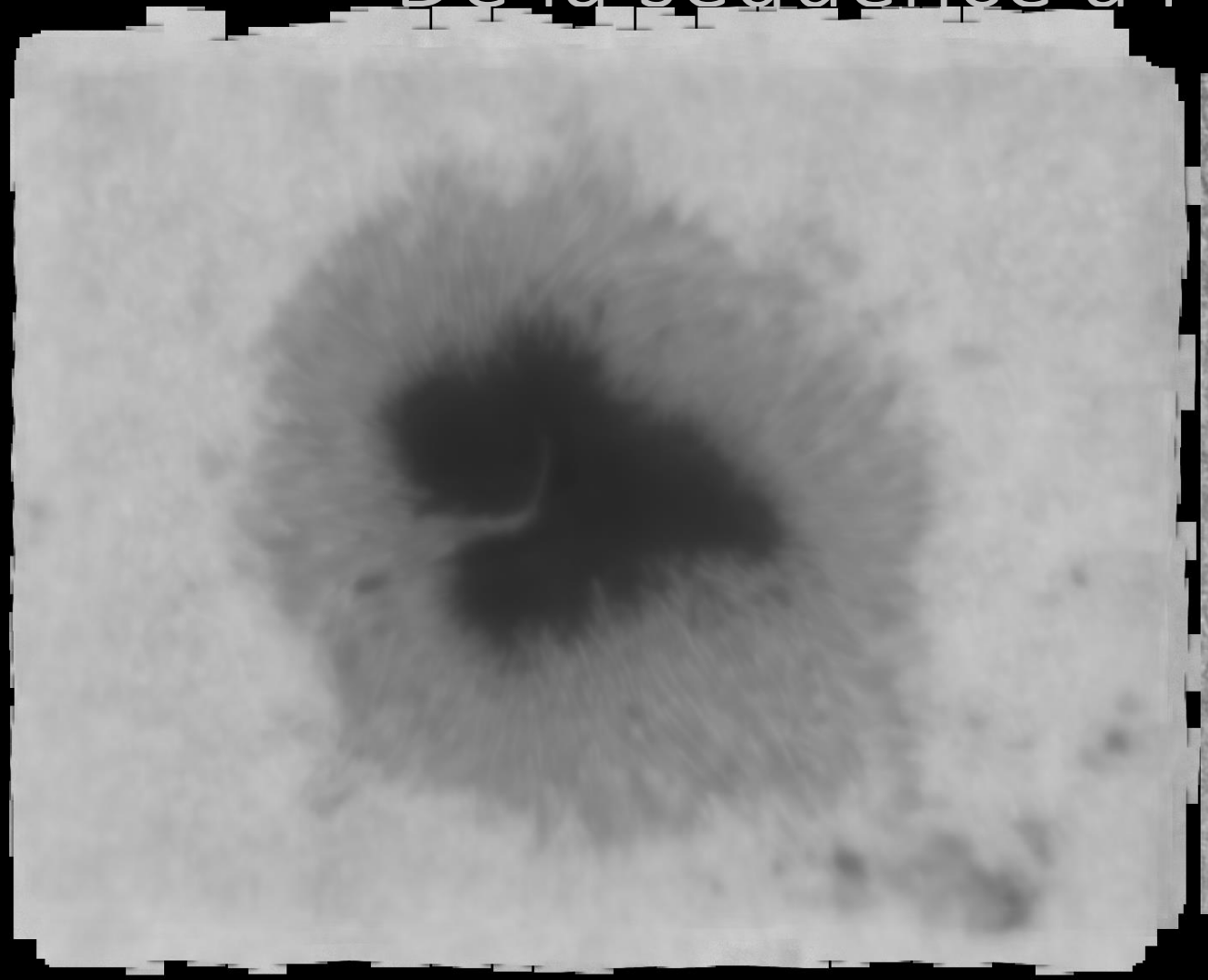
De la séquence à l’image du Soleil



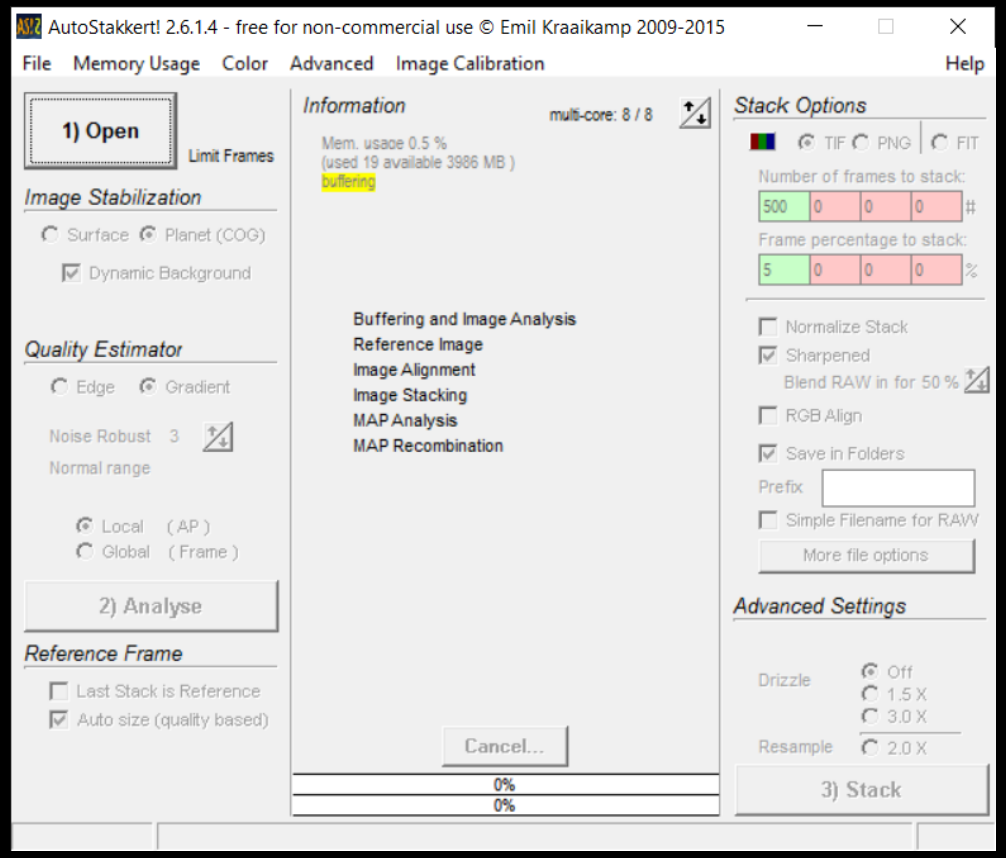
Philippe Morel,
Astro Club de France,
Observatoire Charles Fehrenbach.

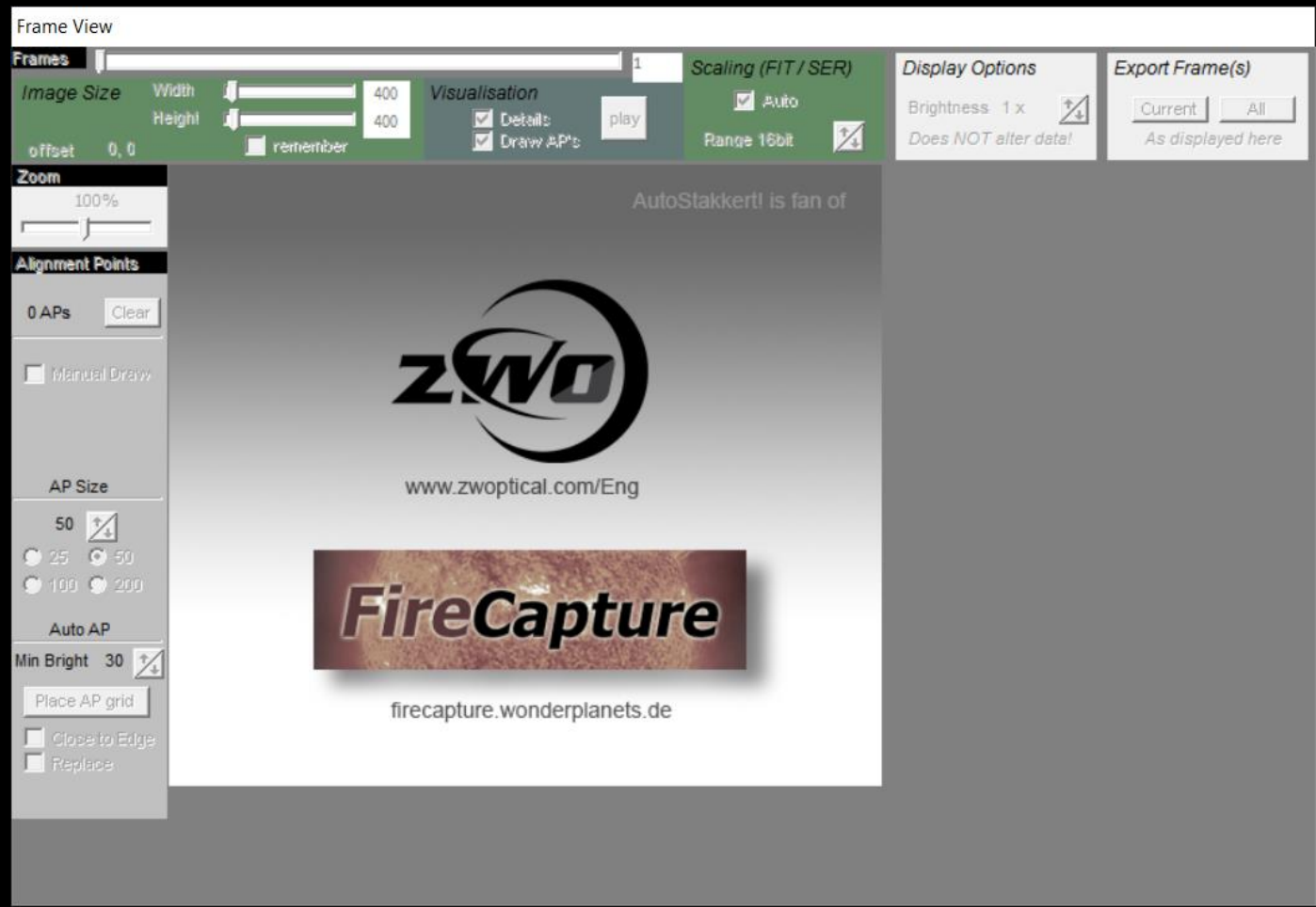
Observatoire Charles Fehrenbach

- 1) Ouverture d’Autostakkert 2.0,
- 2) Réalisation du FLAT,
- 3) Compositage avec division de chaque image par le FLAT,
- 4) Choix du meilleur AP,
- 5) Choix du meilleur nombre d’images,
- 6) Post traitement par ondelettes dans Registax 6.0
- 7) Masque flou dans imppg,
- 8) Masque flou puis Lucy-Richardson dans imppg,
- 9) Astra Image 4.0,
- 10) Comparatif.

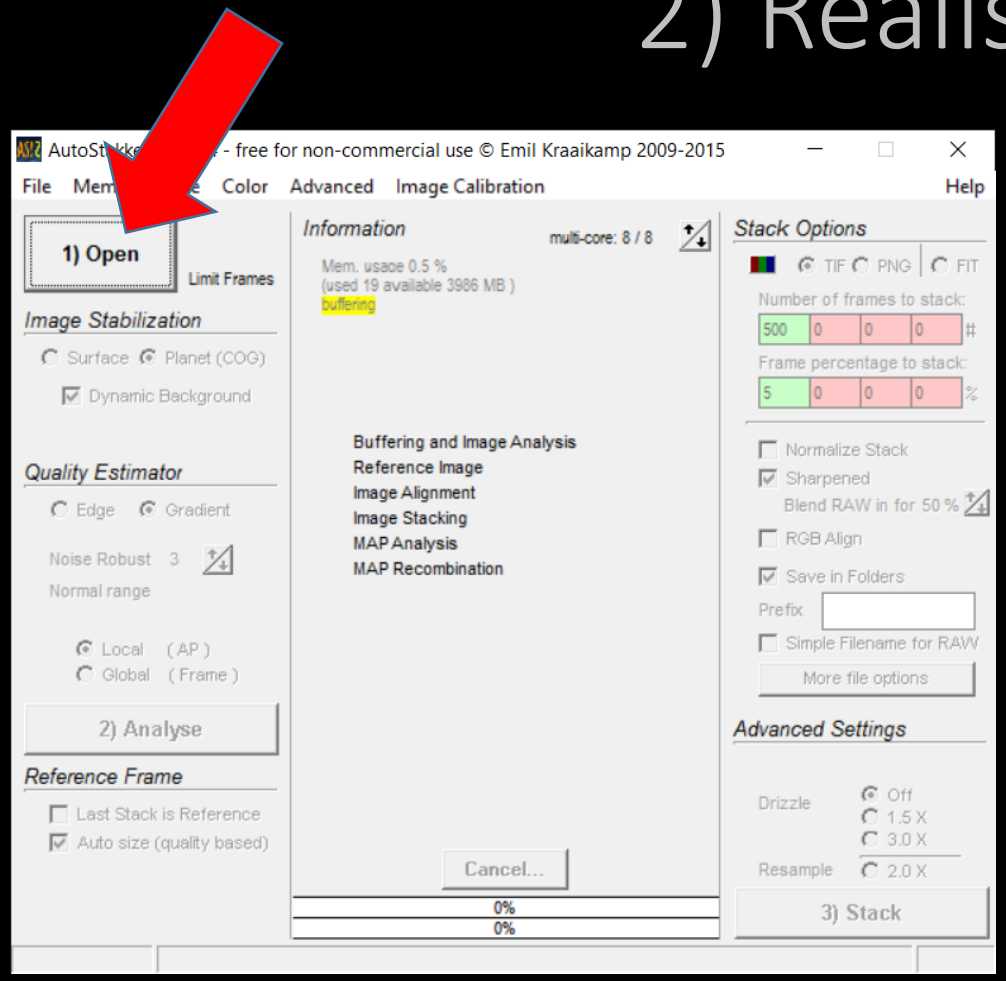
1) Ouverture d’Autostakkert 2.0

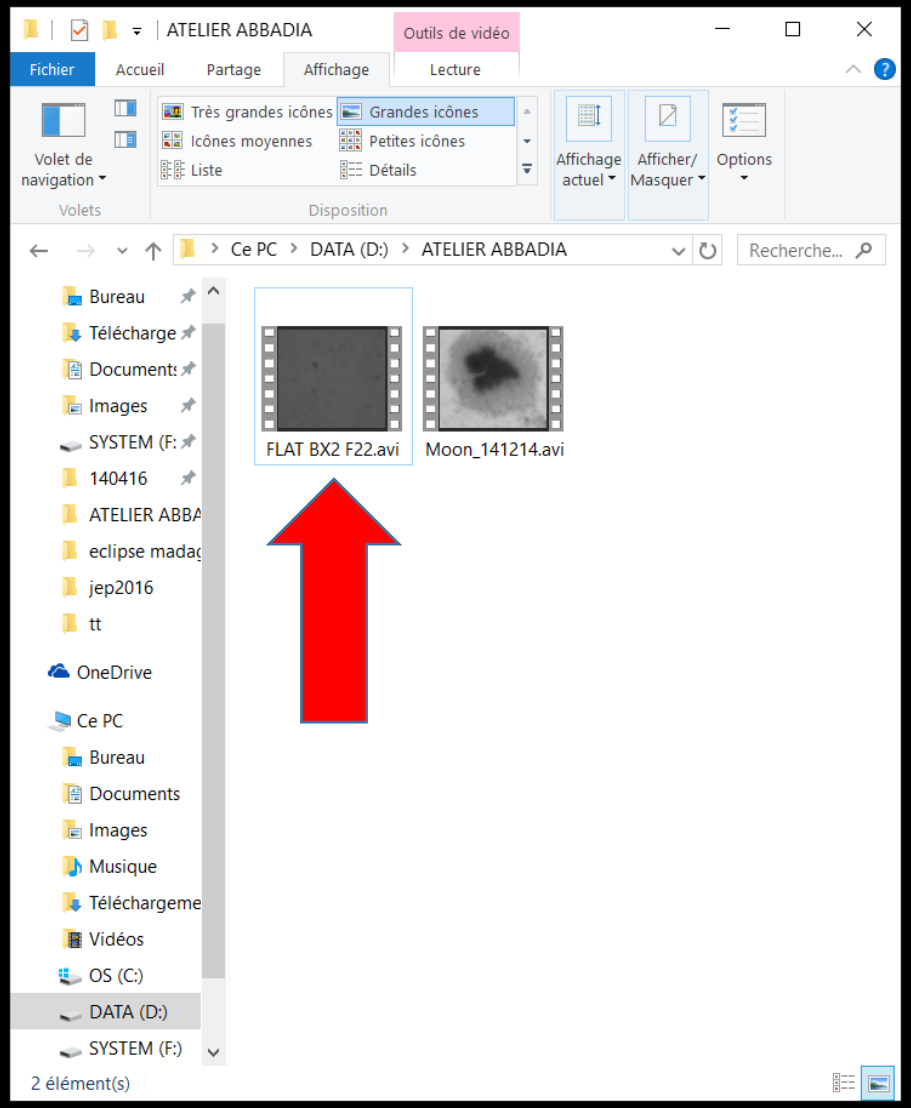
1) Ouverture d’Autostakkert 2.0

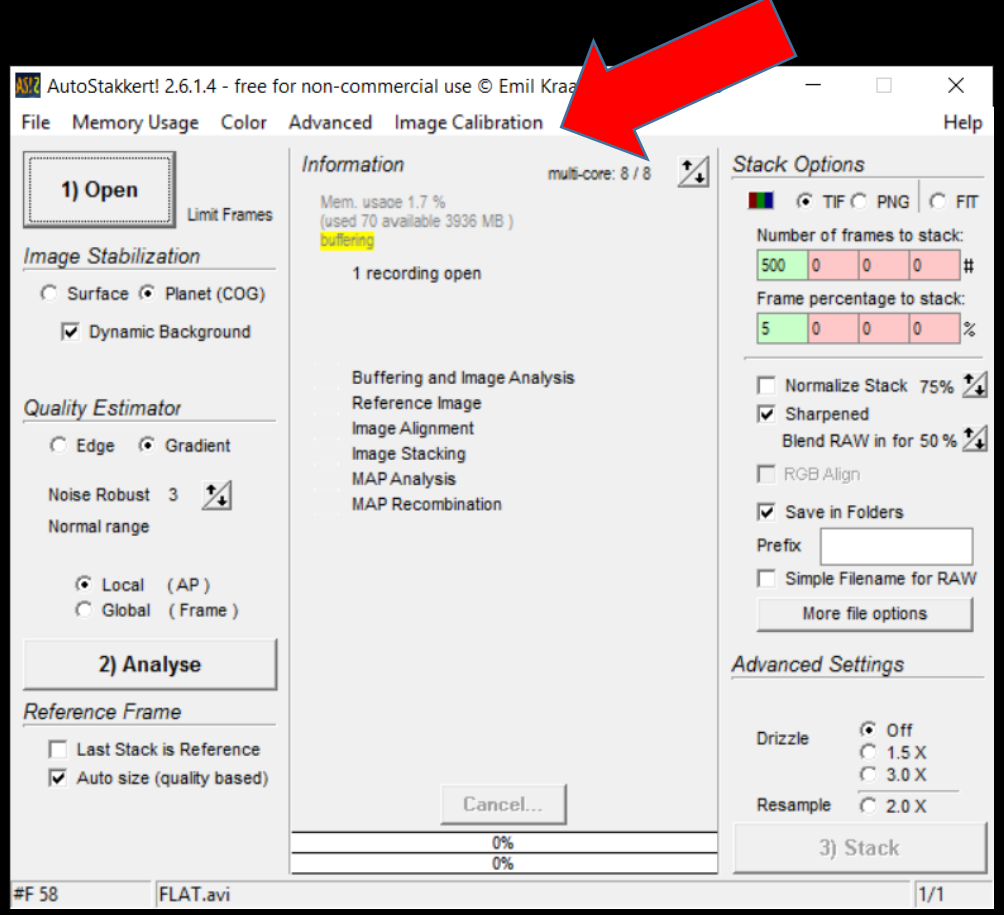


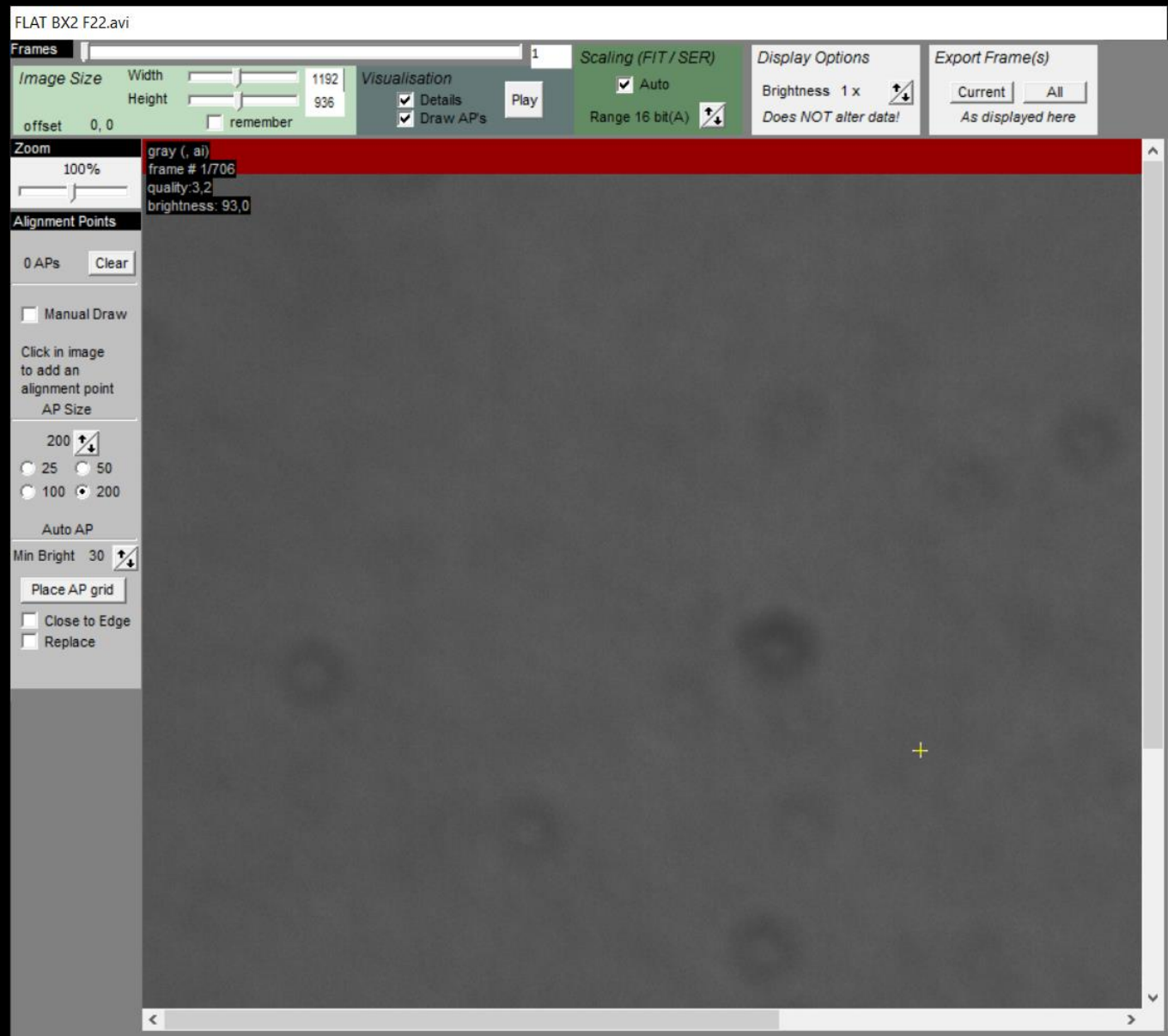


2) Réalisation du FLAT

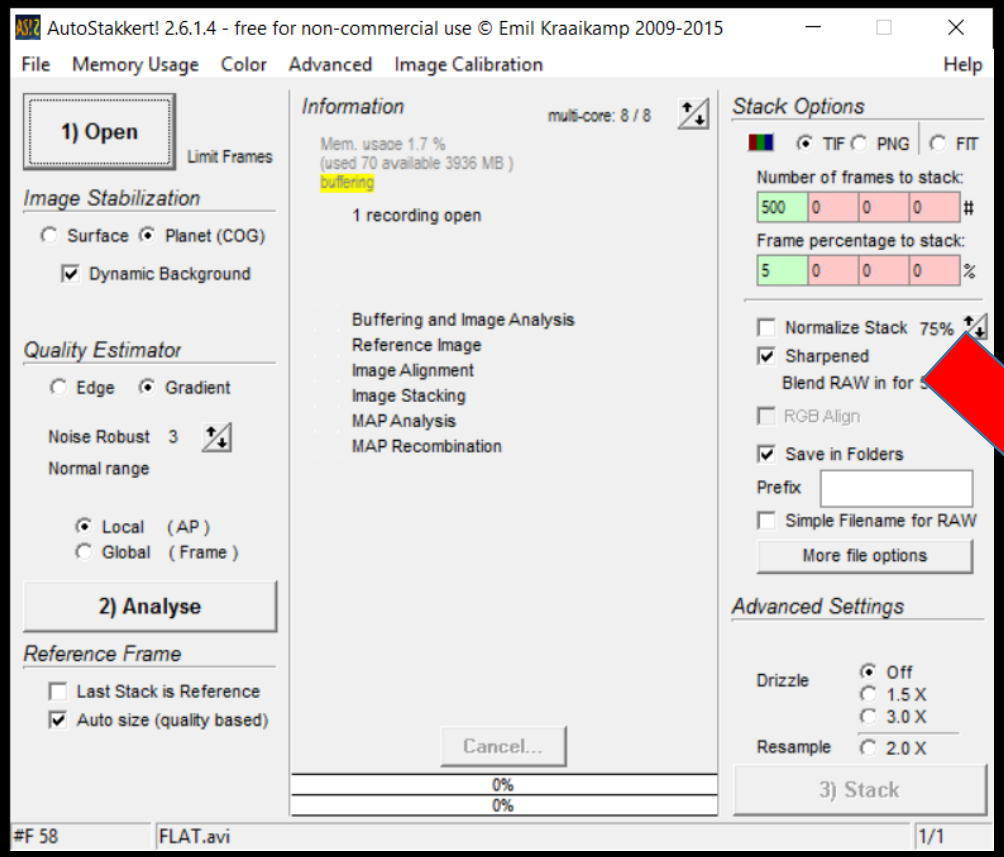


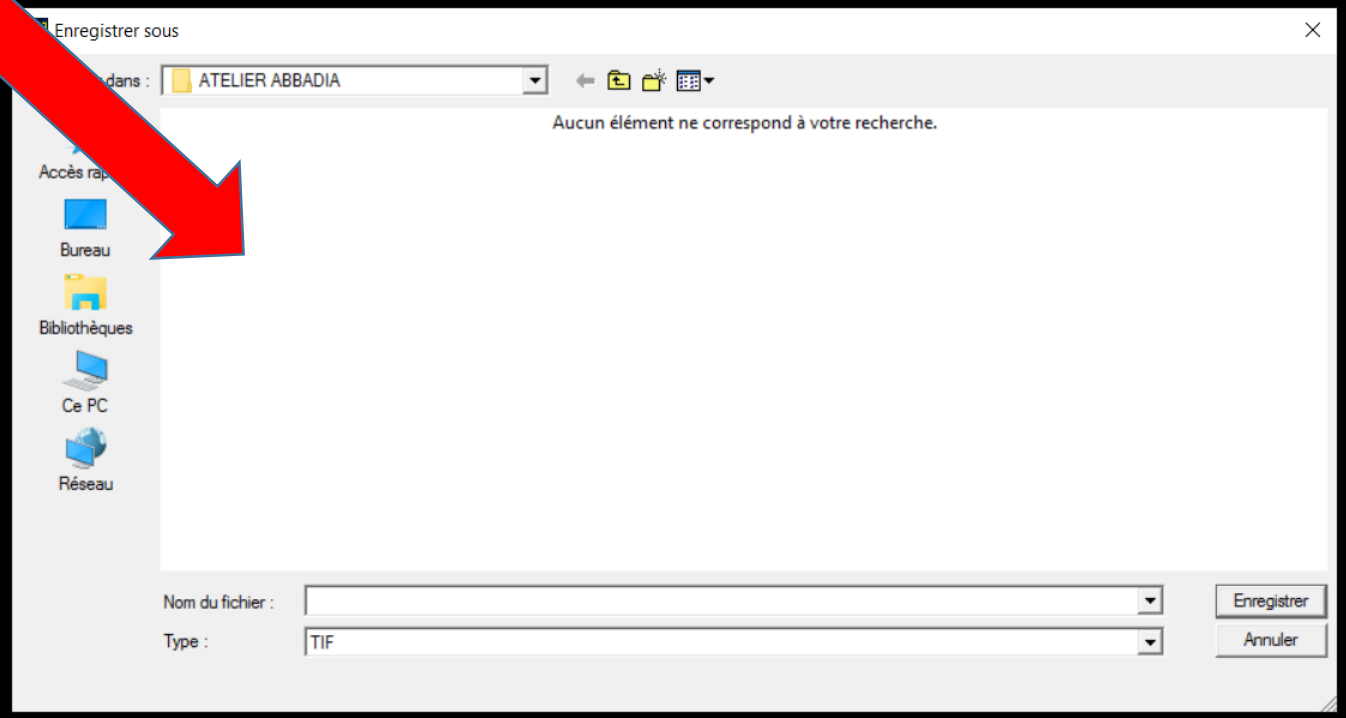




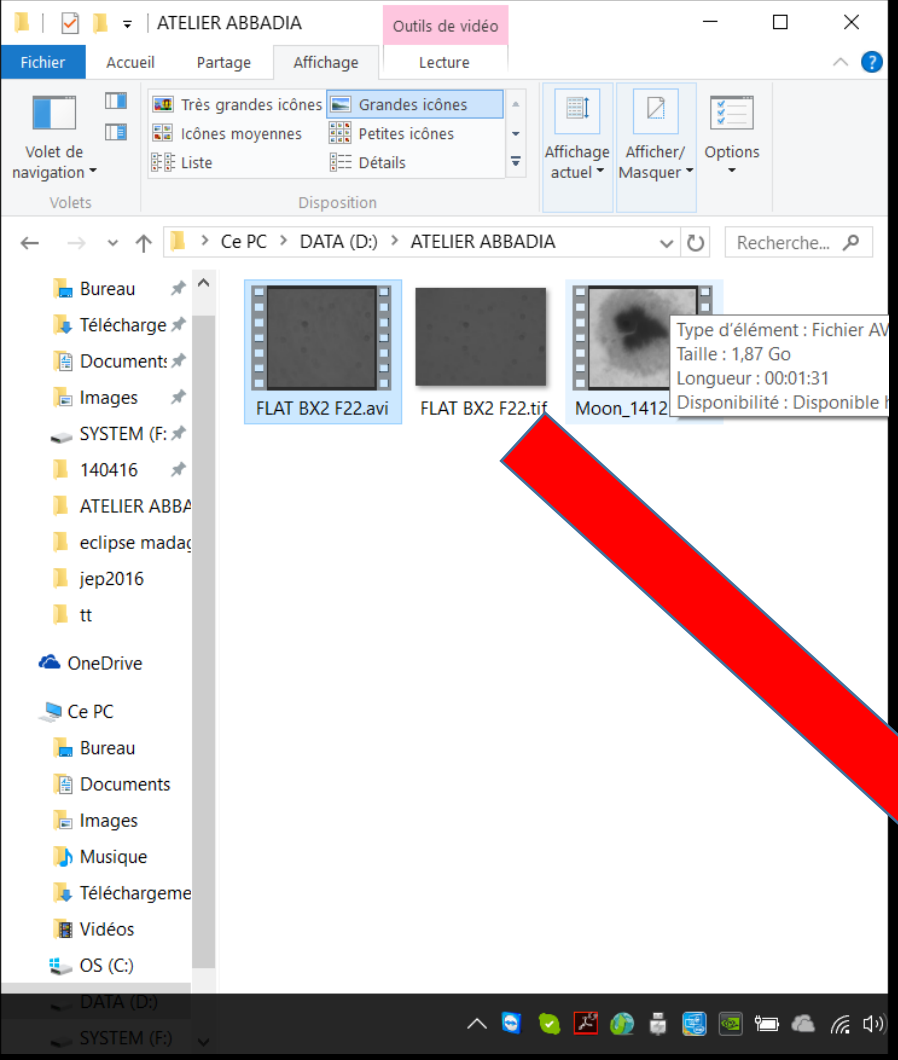


- Onglet « Image Calibration »,
- Choisir « Create Master Flat ».



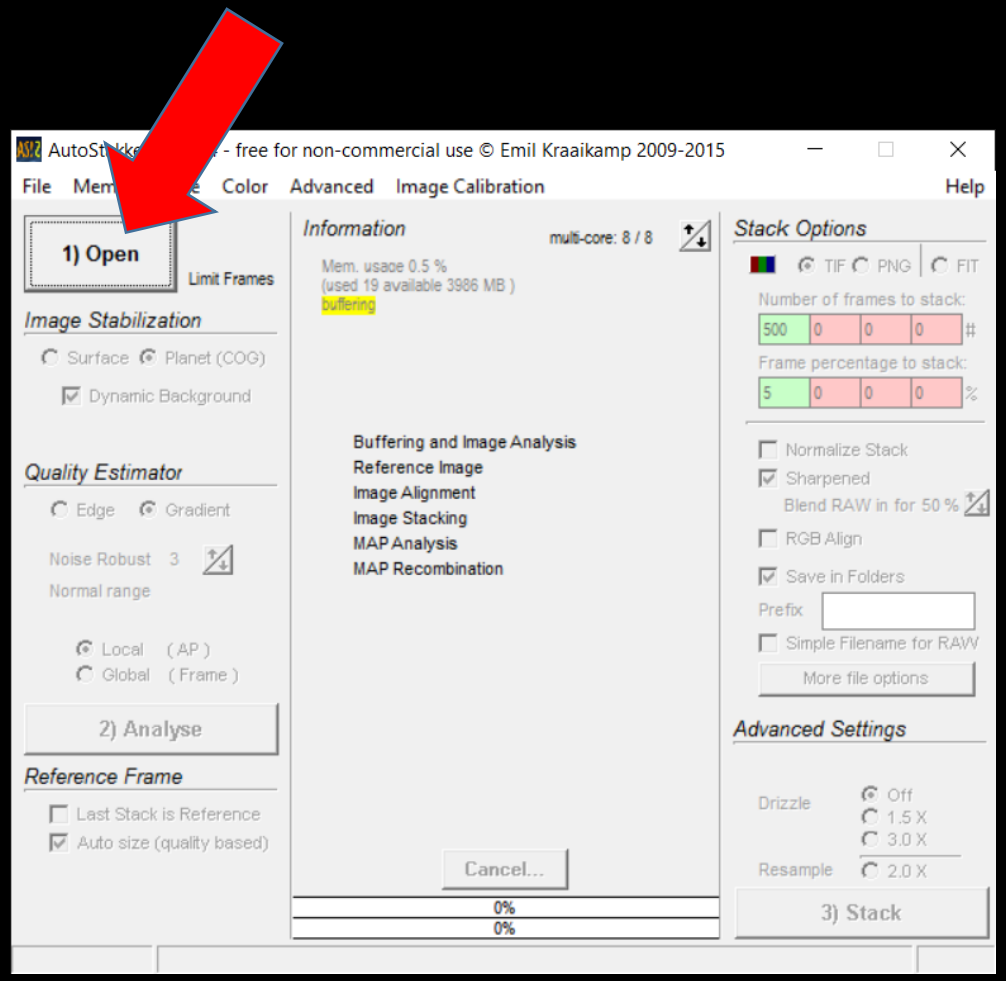


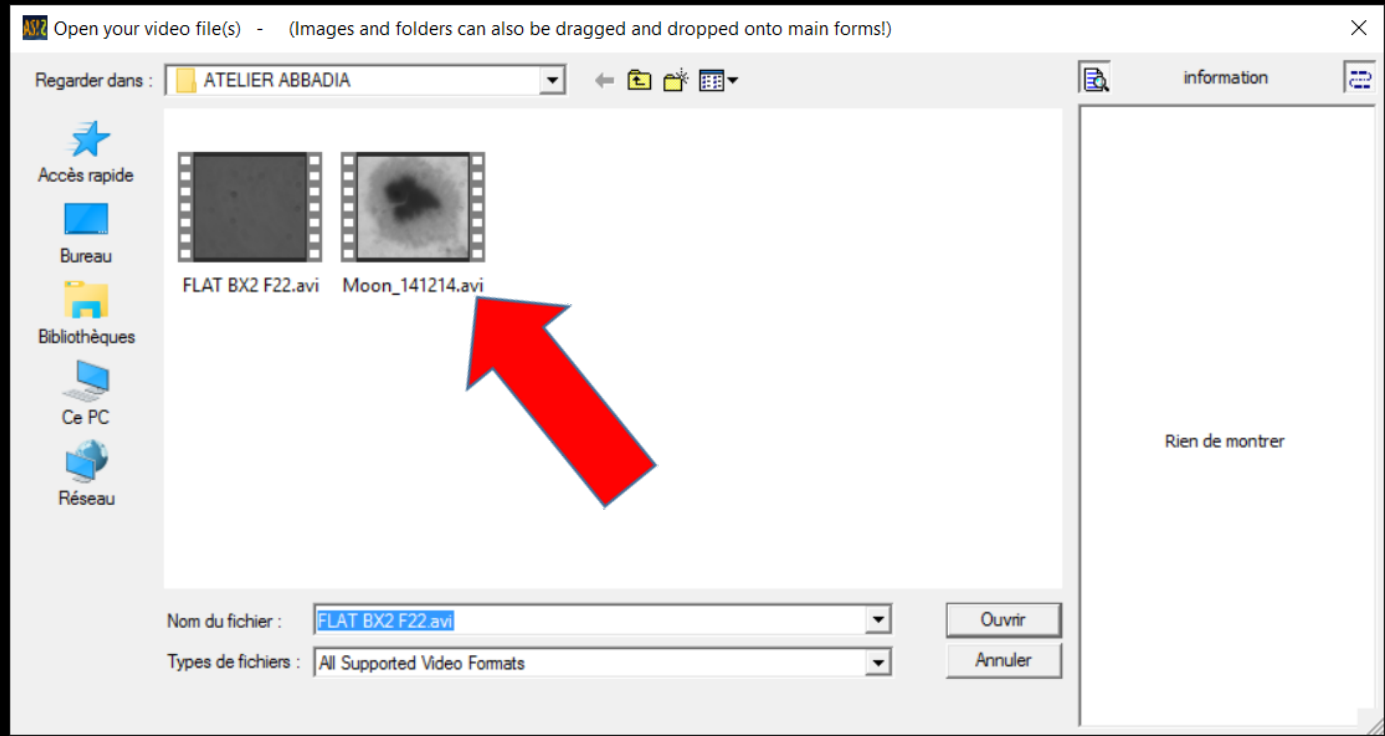
- Apparait l'invite à l'enregistrement de l'image de Flat qui va être générée.

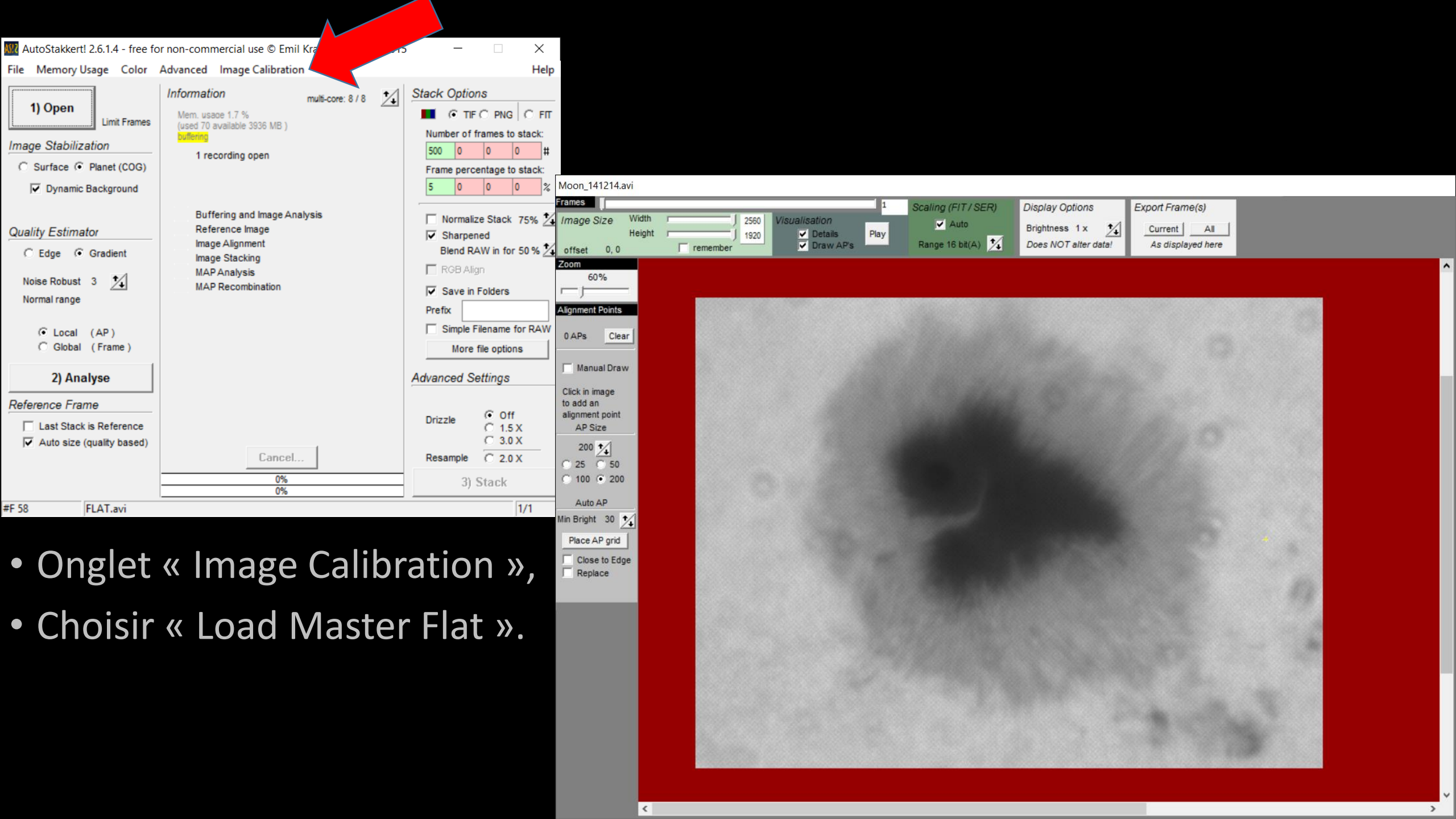


- L'image de Flat est générée. Il importe de la nommer de manière à pouvoir être réutilisée à l'avenir.

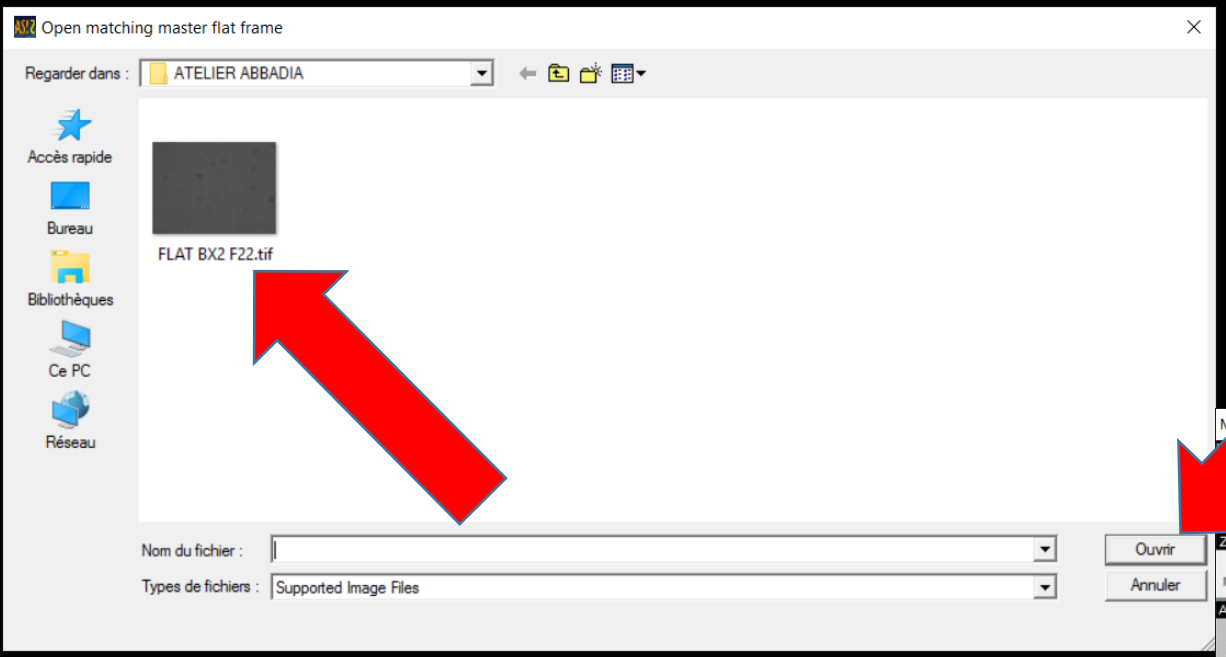
3) Compositage avec division de chaque image par le FLAT

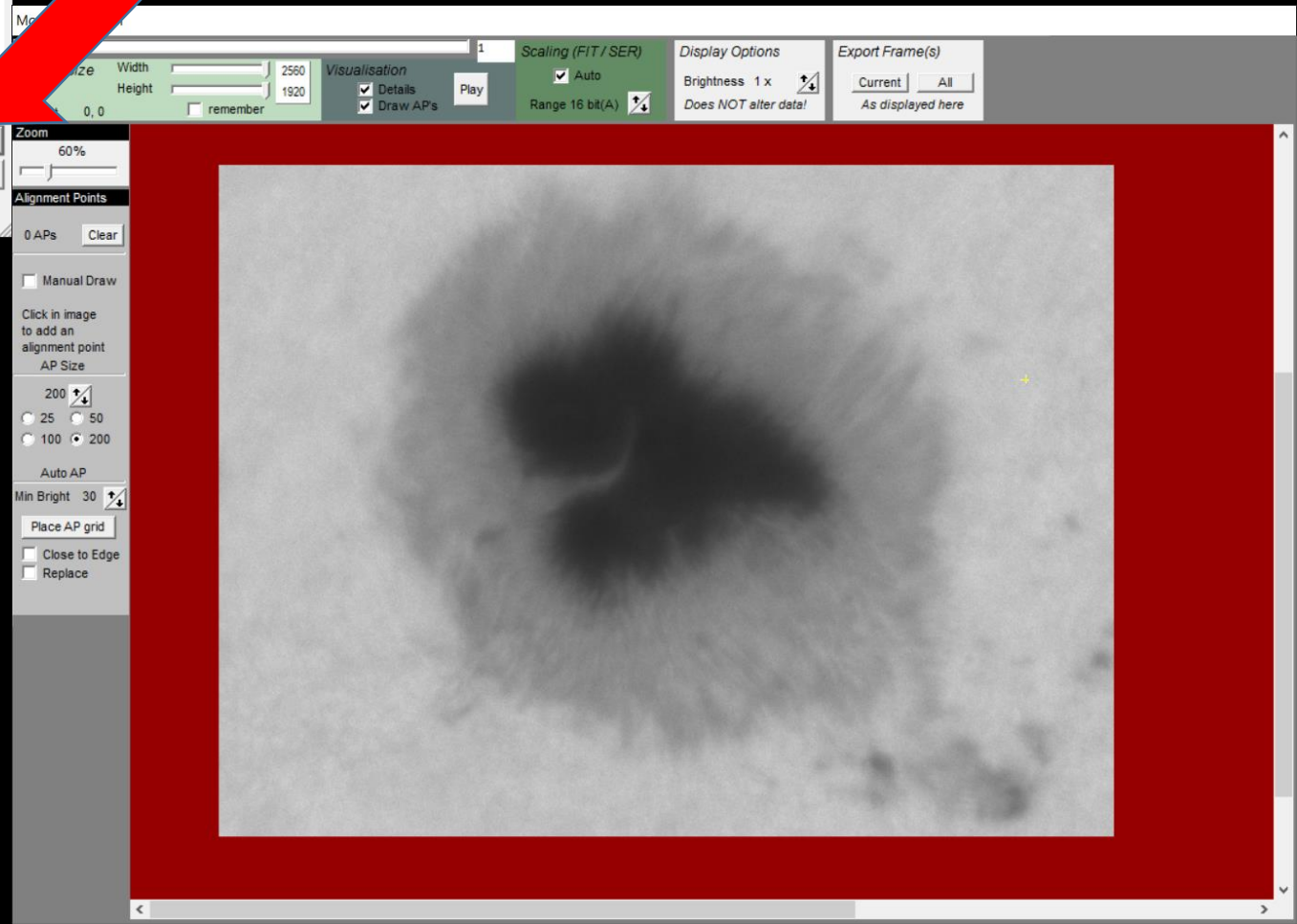

AutoStakkert! - free for non-commercial use © Emil Kraaikamp 2009-2015
File
Memory
Color
Advanced
Image Calibration
Help
1) Open
Limit Frames
Image Stabilization
Surface
Planet (COG)
Dynamic Background
Quality Estimator
Edge
Gradient
Noise Robust 3
Normal range
Local (AP)
Global (Frame)
2) Analyse
Reference Frame
Last Stack is Reference
Auto size (quality based)
Information
multi-core: 8 / 8
Mem. usage 0.5 %
(used 19 available 3986 MB)
buffering
Buffering and Image Analysis
Reference Image
Image Alignment
Image Stacking
MAP Analysis
MAP Recombination
Cancel...
0%
0%
Stack Options
TIF
PNG
FIT
Number of frames to stack:
500
Frame percentage to stack:
5
Normalize Stack
Sharpened
Blend RAW in for 50 %
RGB Align
Save in Folders
Prefix
Simple Filename for RAW
More file options
Advanced Settings
Drizzle
Off
1.5 X
3.0 X
Resample
2.0 X
3) Stack


Open your video file(s) - (Images and folders can also be dragged and dropped onto main forms!)
Regarder dans :
ATELIER ABBADIA
information
Accès rapide
Bureau
Bibliothèques
Ce PC
Réseau
FLAT BX2 F22.avi
Moon_141214.avi
Rien de montrer
Nom du fichier :
FLAT BX2 F22.avi
Types de fichiers :
All Supported Video Formats
Ouvrir
Annuler

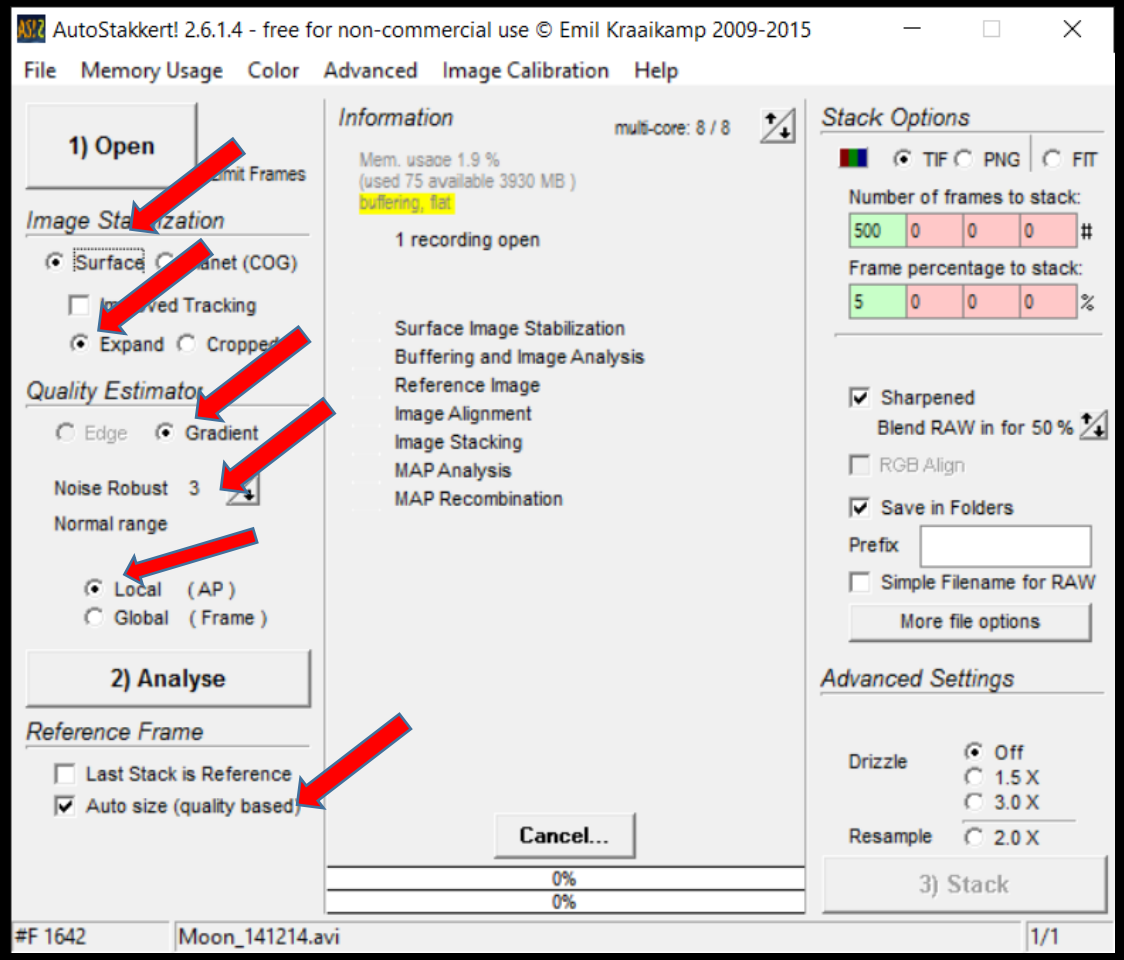


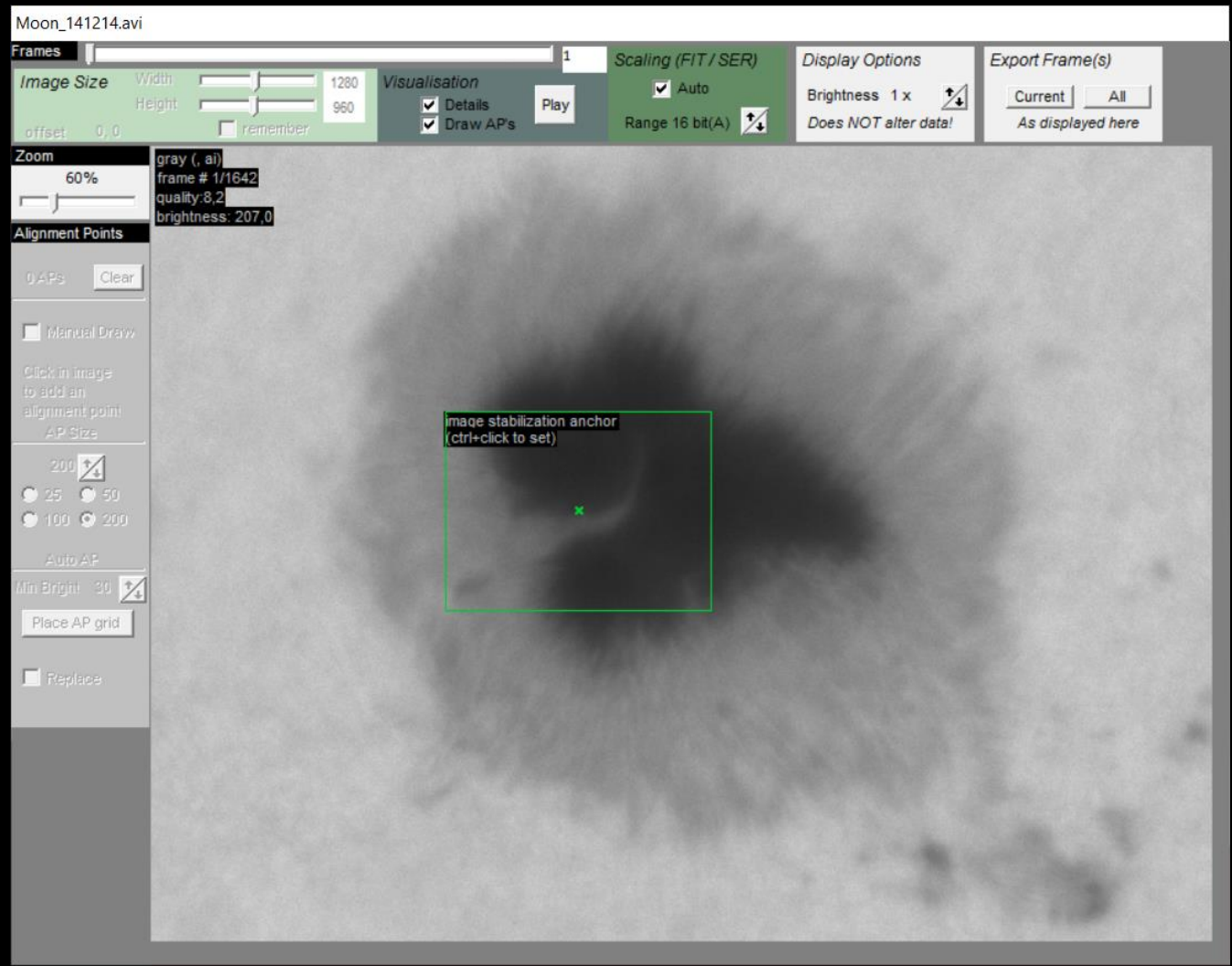
- Onglet « Image Calibration »,
- Choisir « Load Master Flat ».



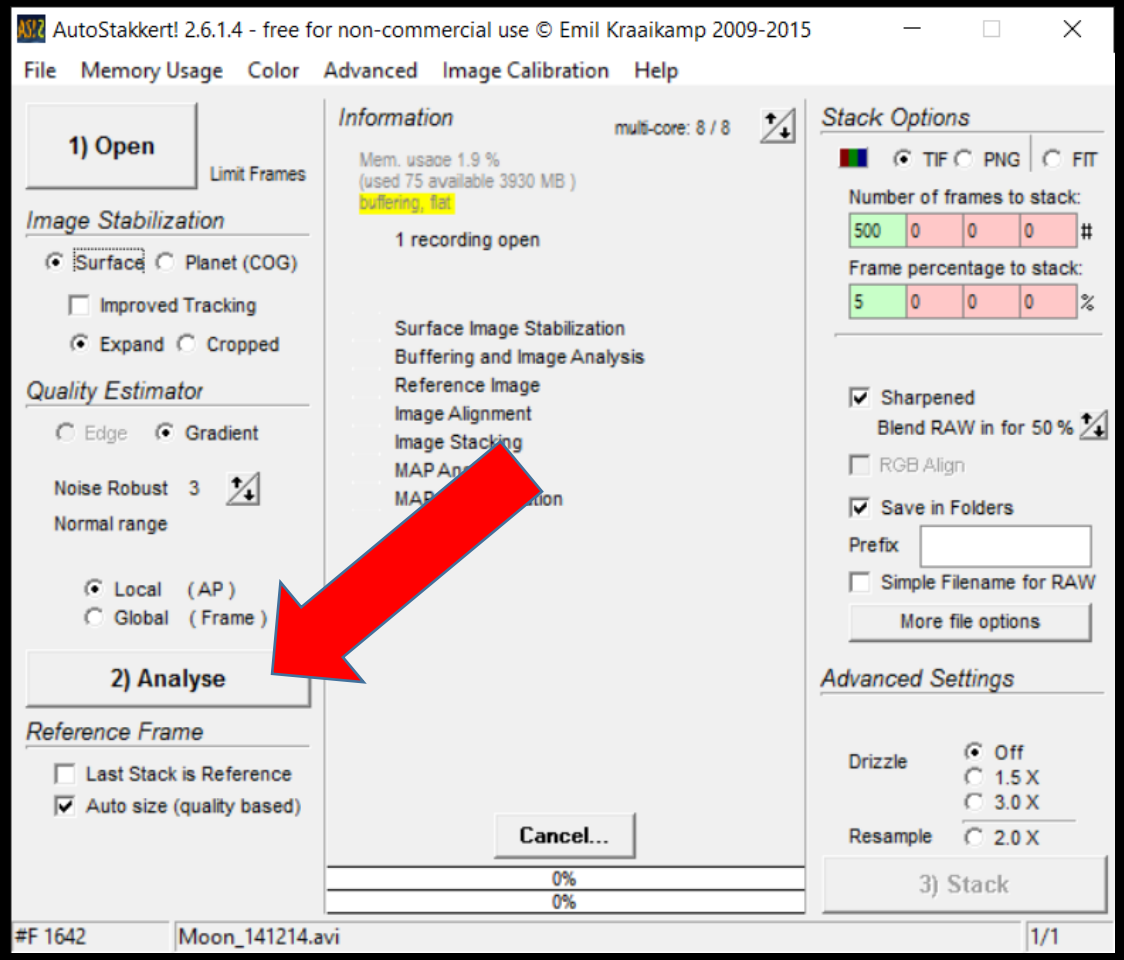


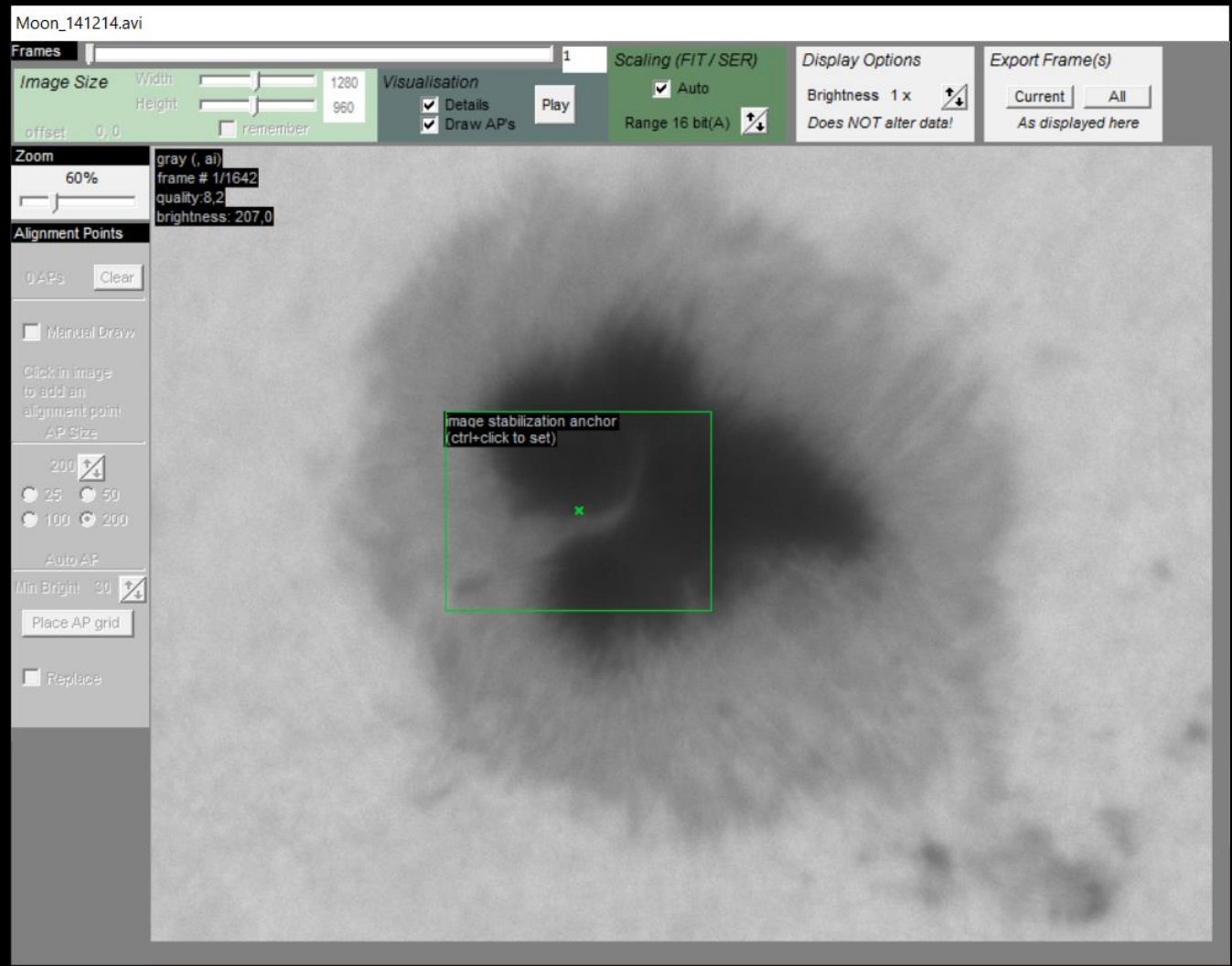
- Choisir l’image de Flat,
- Appuyer sur « Ouvrir »,
- L’image déflatée apparait.



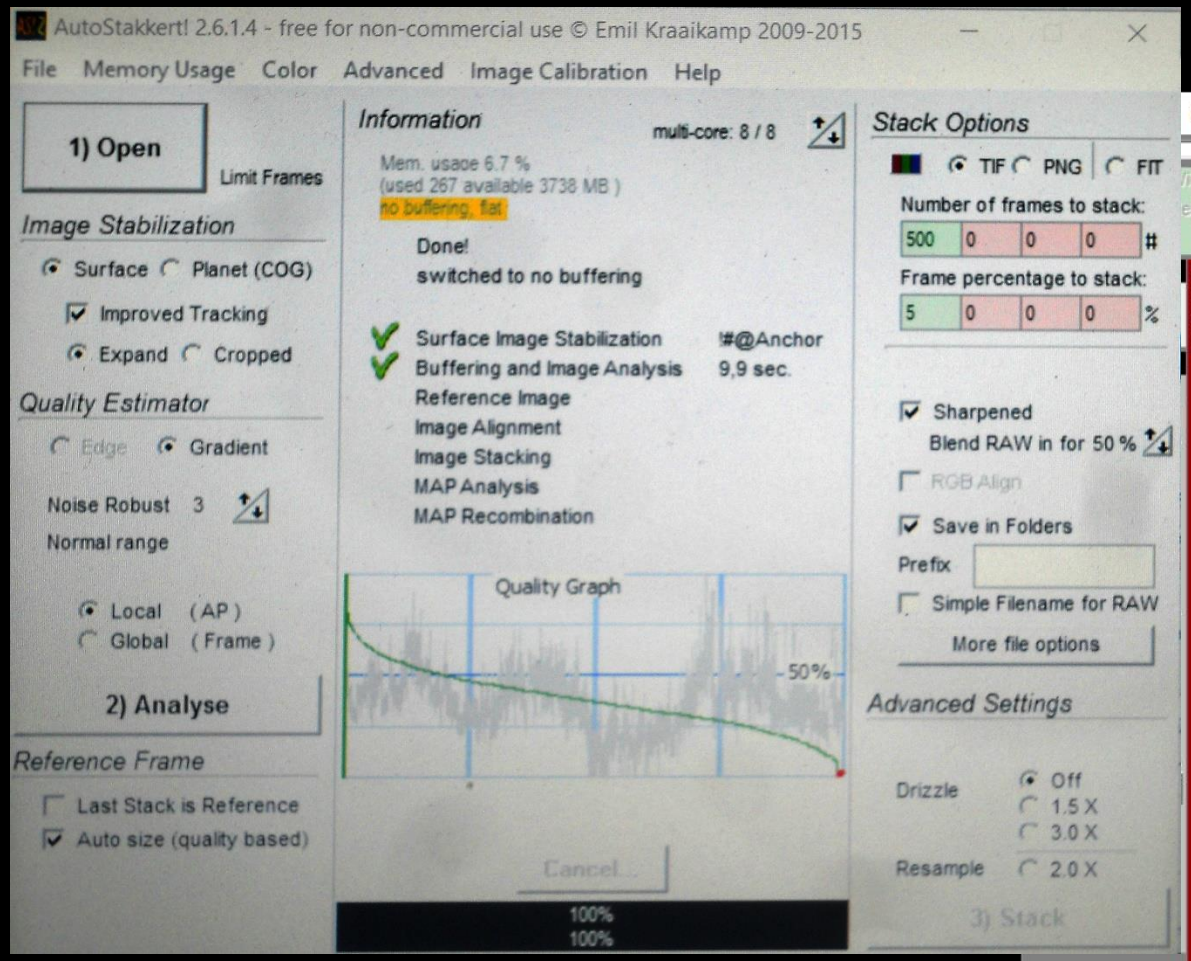


- Choisir les paramètres de compositage,
- Placer le point de stabilisation sur une limite de contraste près du centre de l’image.

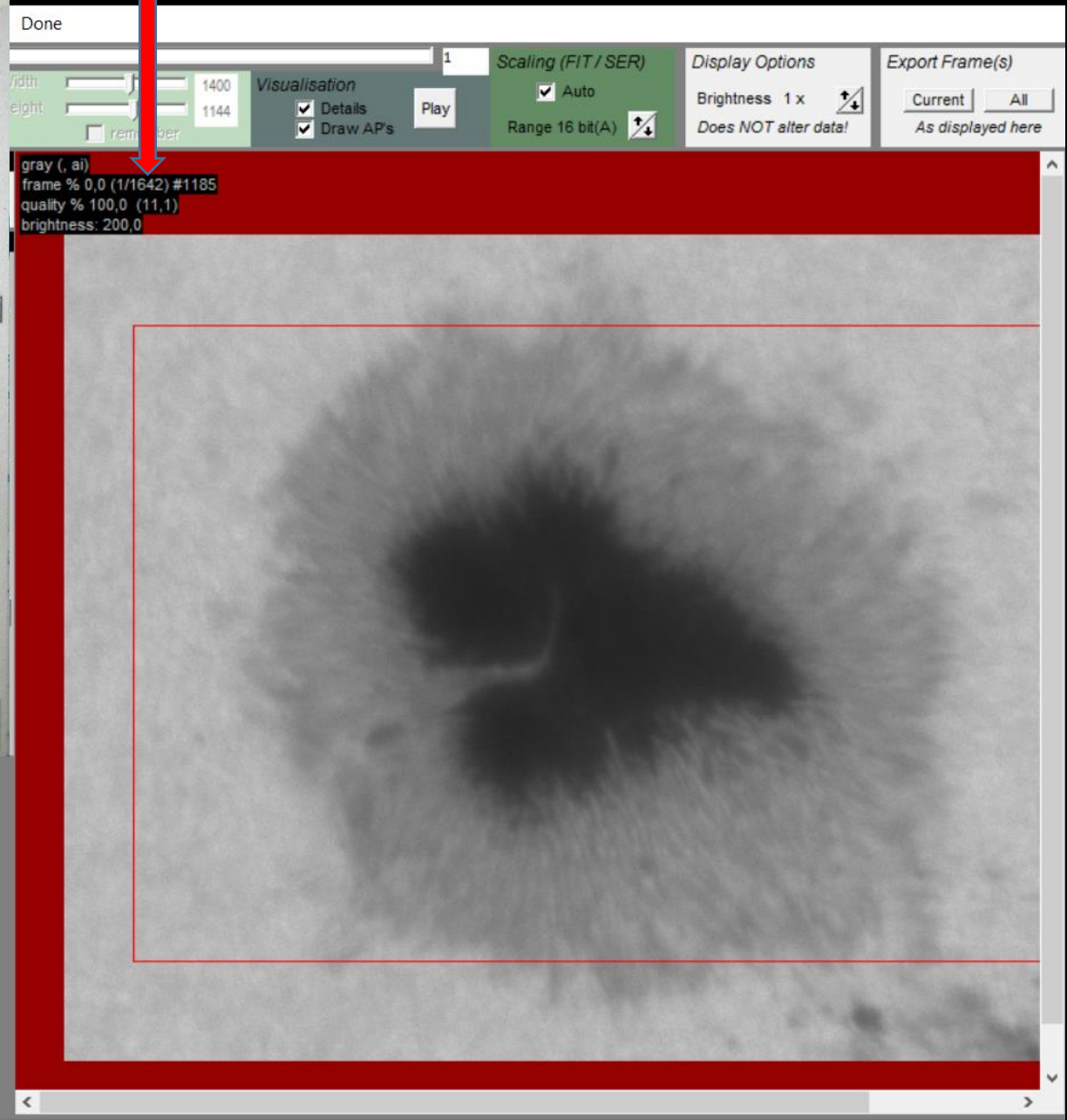




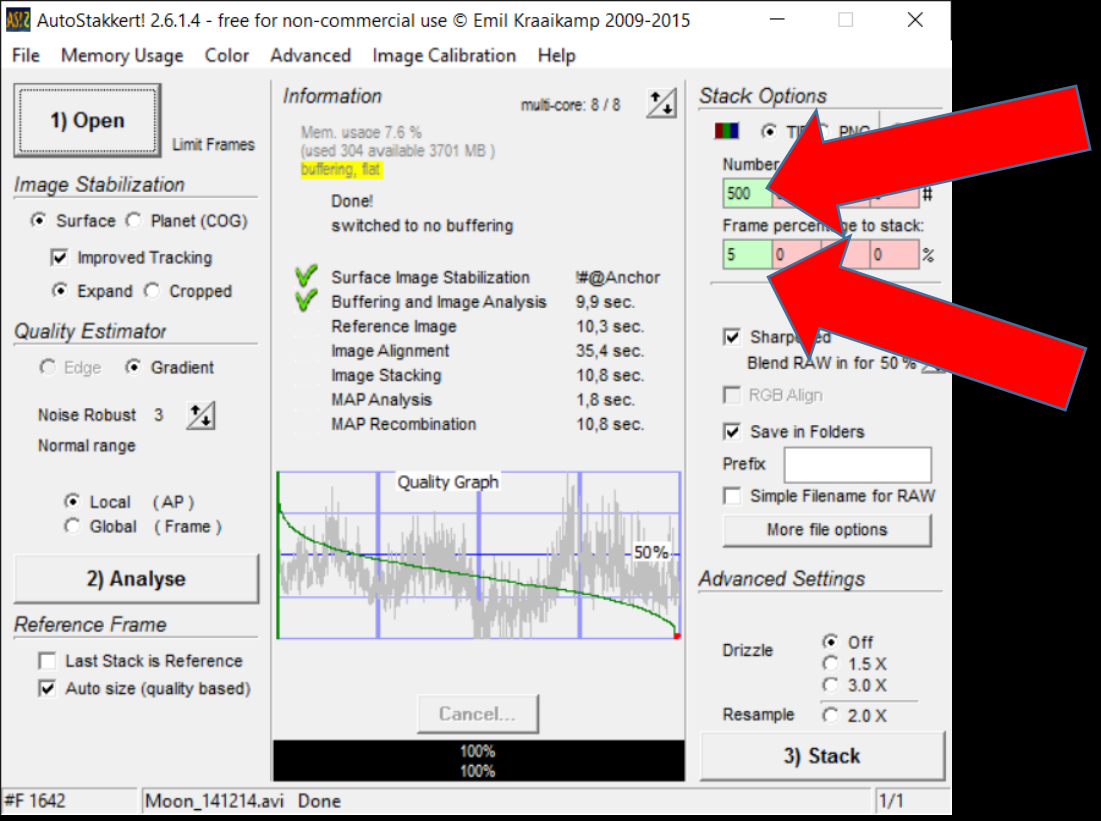
- Cliquer sur « Analyse »,
- Placer le point de stabilisation sur une limite de contraste près du centre de l’image.



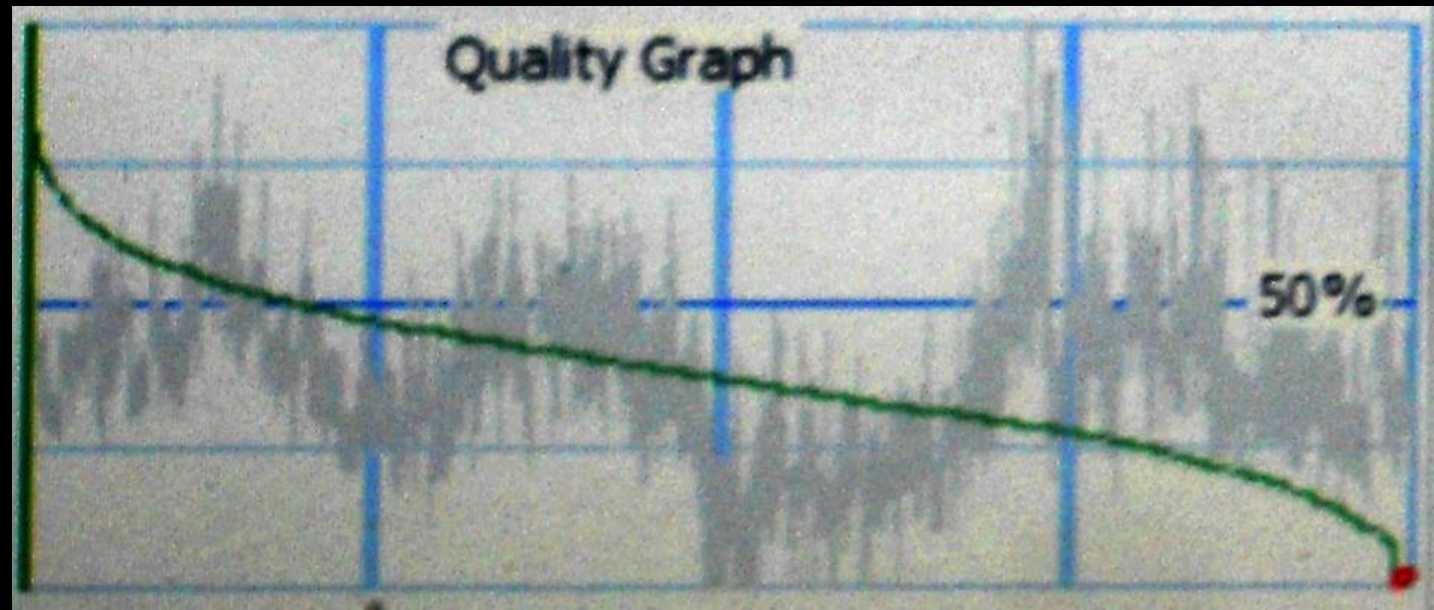
Nombre d'images

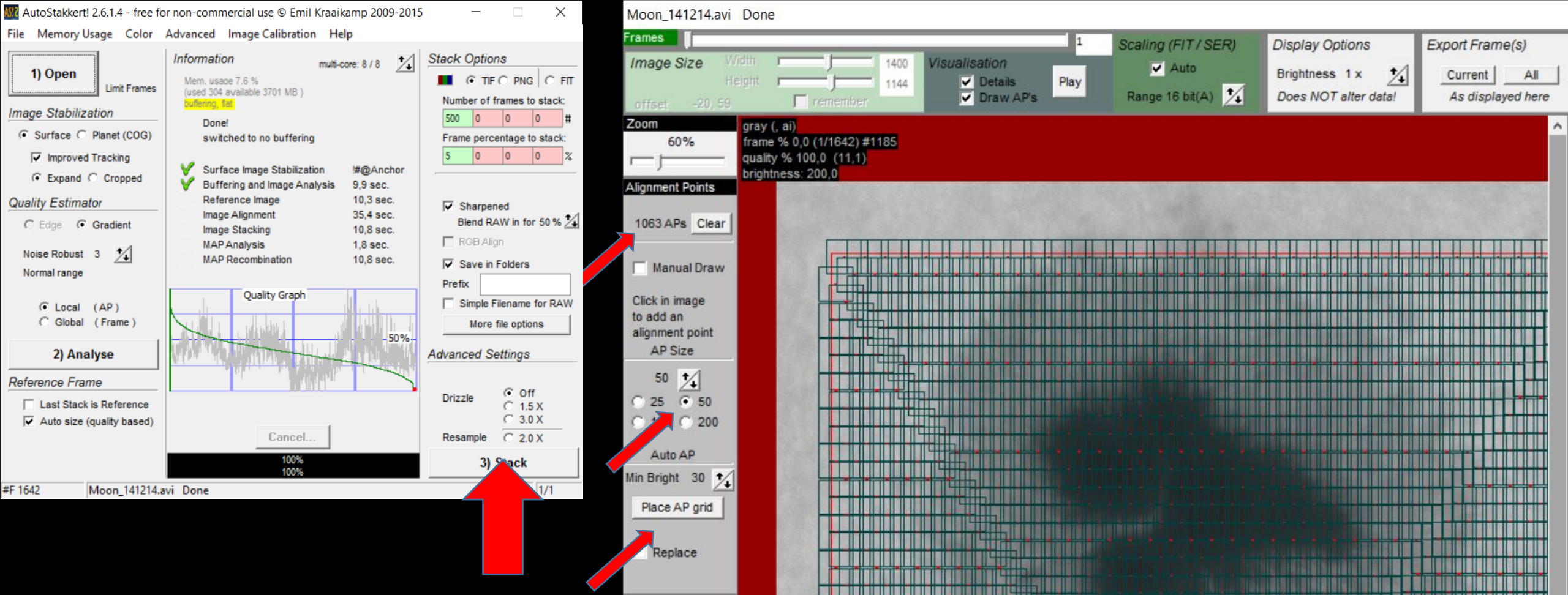


- Apparait la meilleure image de la série,
- Apparait le graphe de répartition de qualité des images.

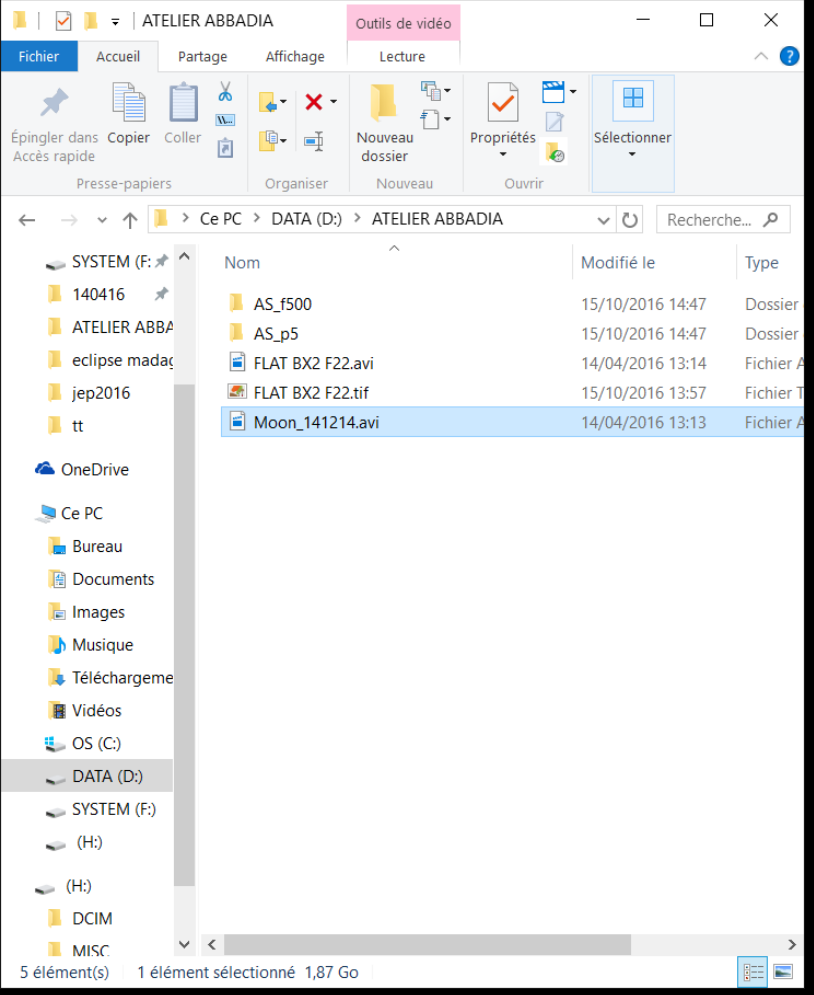


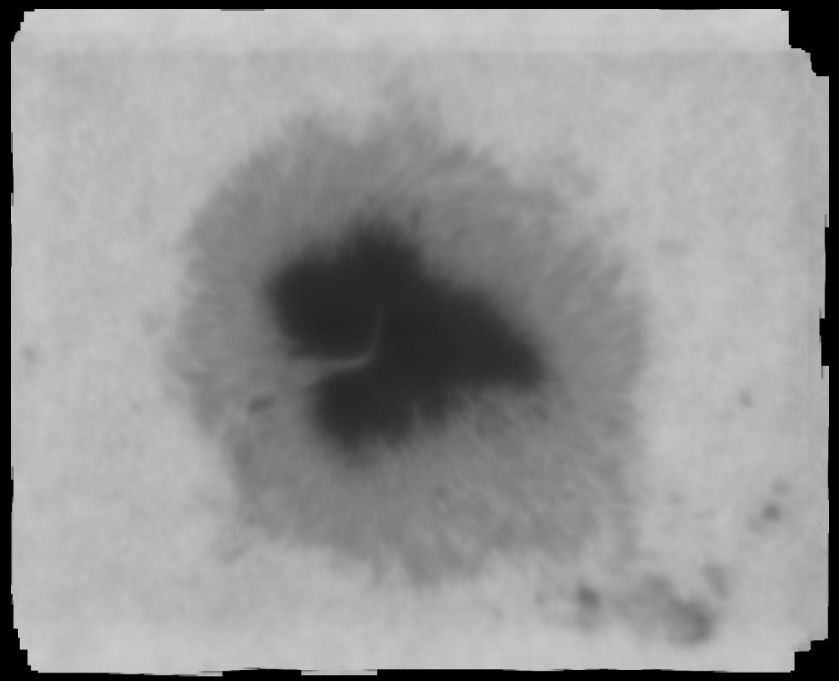
- Choisir le nombre d'images à compositer selon ce qui apparait à plus de 50%,
- Choisir le pourcentage d'images du total selon le critère de % voulu.



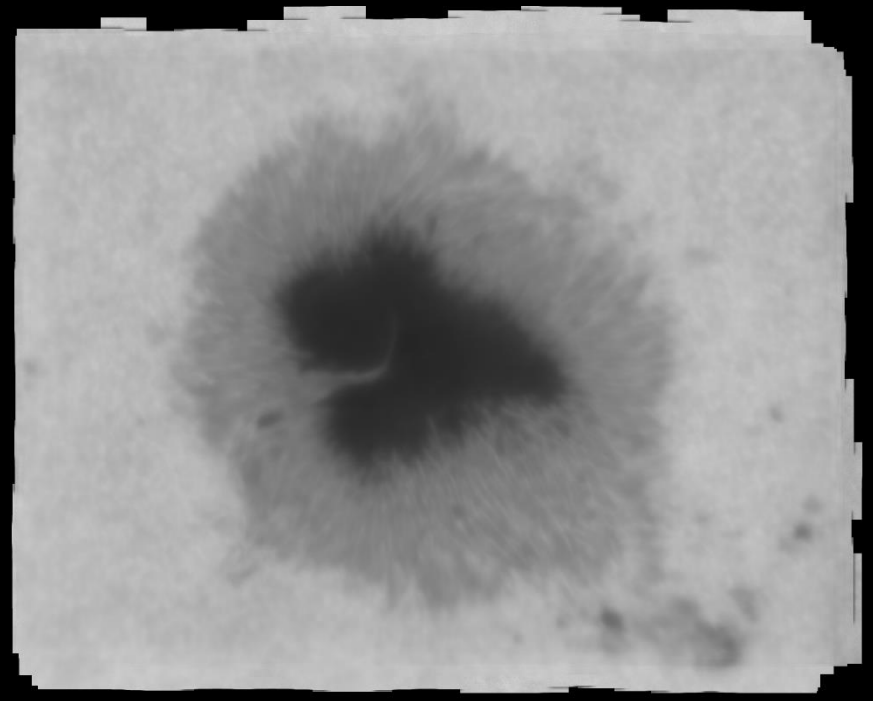


- Cliquer sur « Place AP grid »,
- Choisir la taille des éléments de référence pour le compositage (AP),
- Cliquer sur « Stack ».





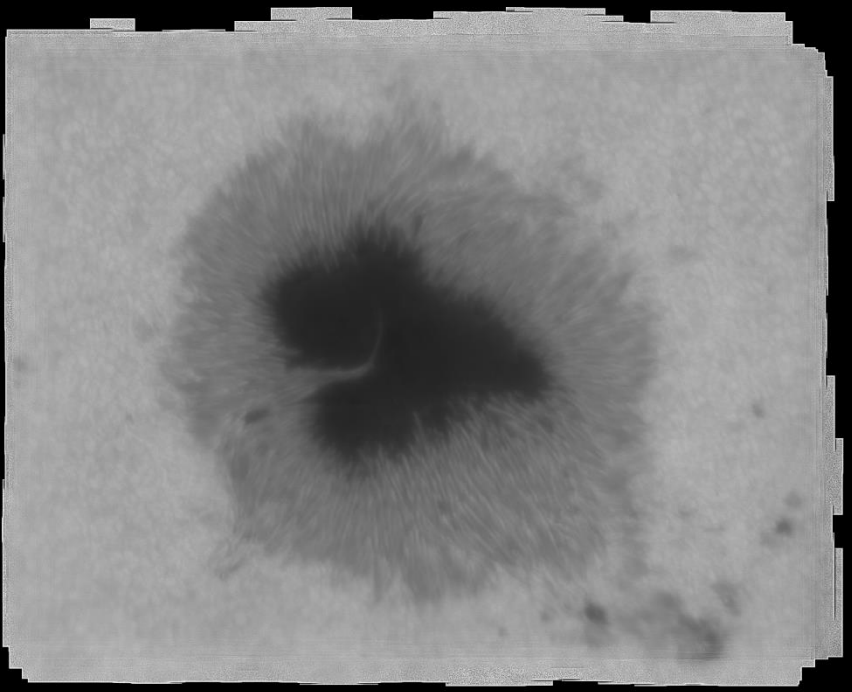
500 images



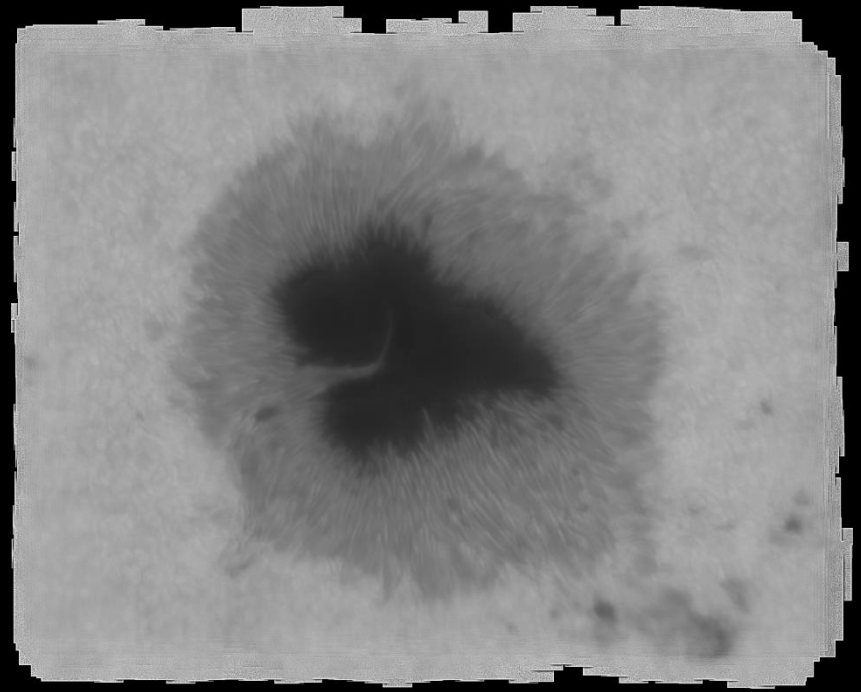
5% = 81 images

- AS2.0 a créé le dossier AS_f500 correspondant au compositage des 500 meilleures images et le dossier AS_p5 correspondant au compositage de 5% du total des images à partir de la meilleure.
- Il les enregistre en brute et avec une déconvolution.

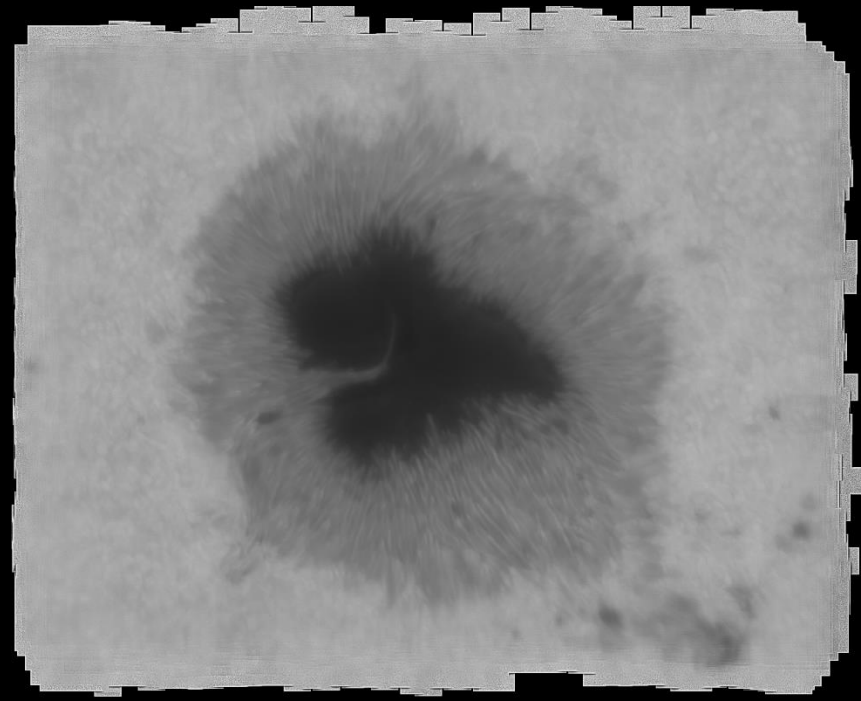
4) Choix du meilleur AP



AP 50 : 1063 zones



AP 25 : 4104 zones

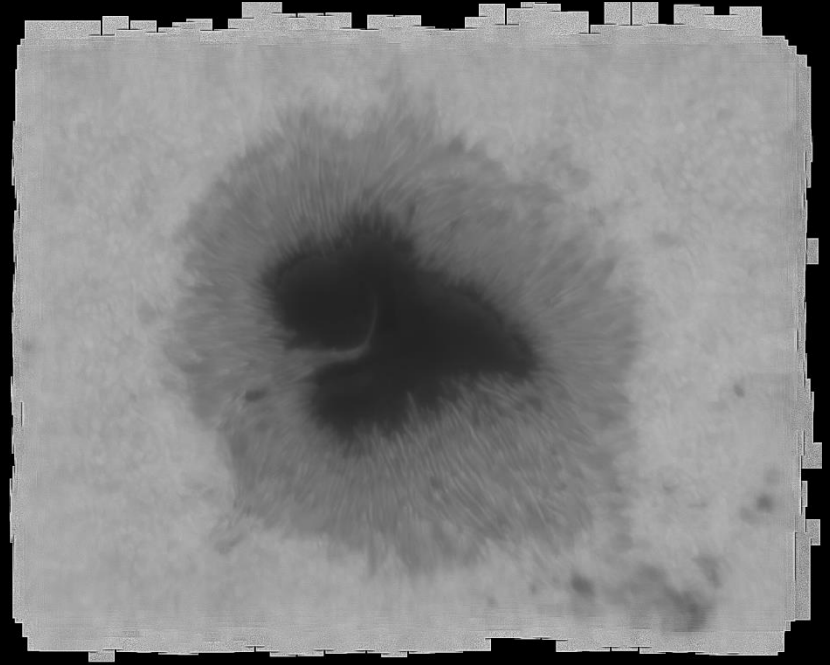


AP 20 : 6589 zones

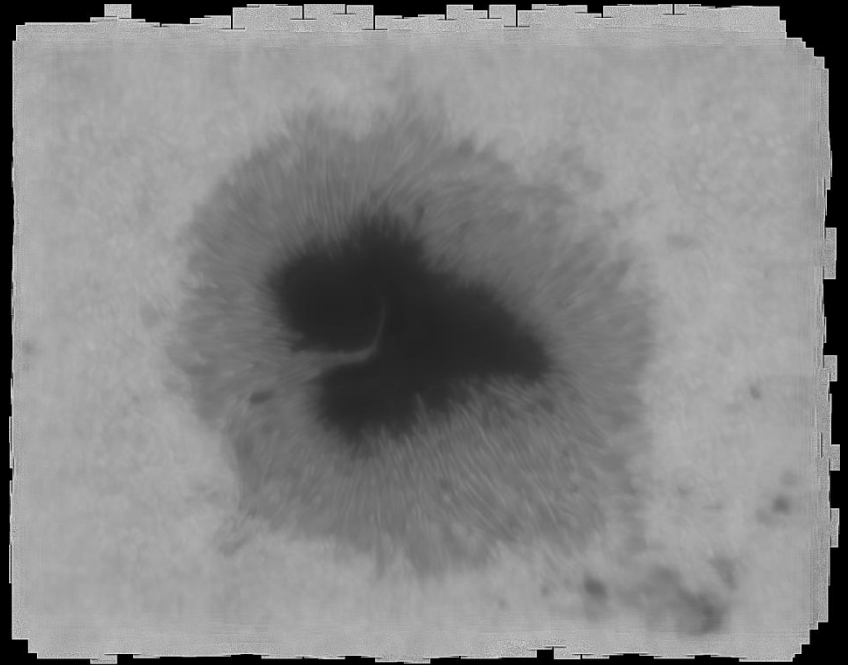
81 images

- Diminuer AP augmente la résolution spatiale mais pas de manière spectaculaire.
- Ne peut se tenter que sur des avi peu turbulents ou dont la turbulence est de faible amplitude.

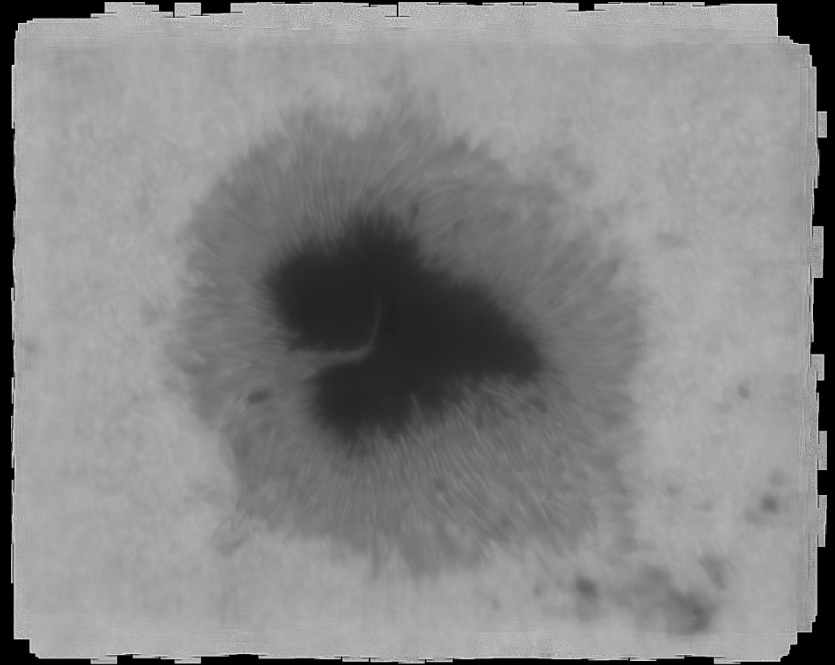
5) Choix du meilleur nombre d’images



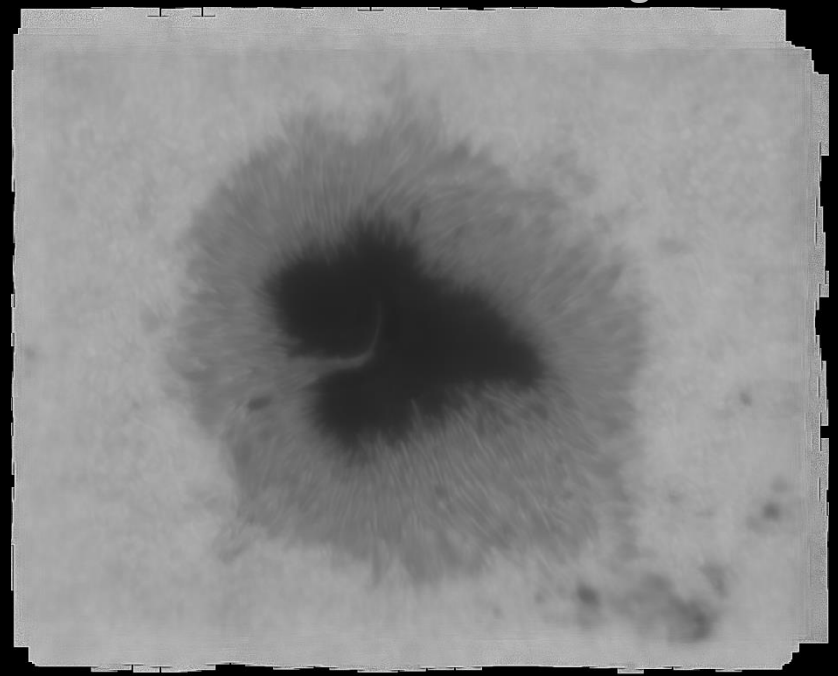
AP 20 : 6589 zones 50 images



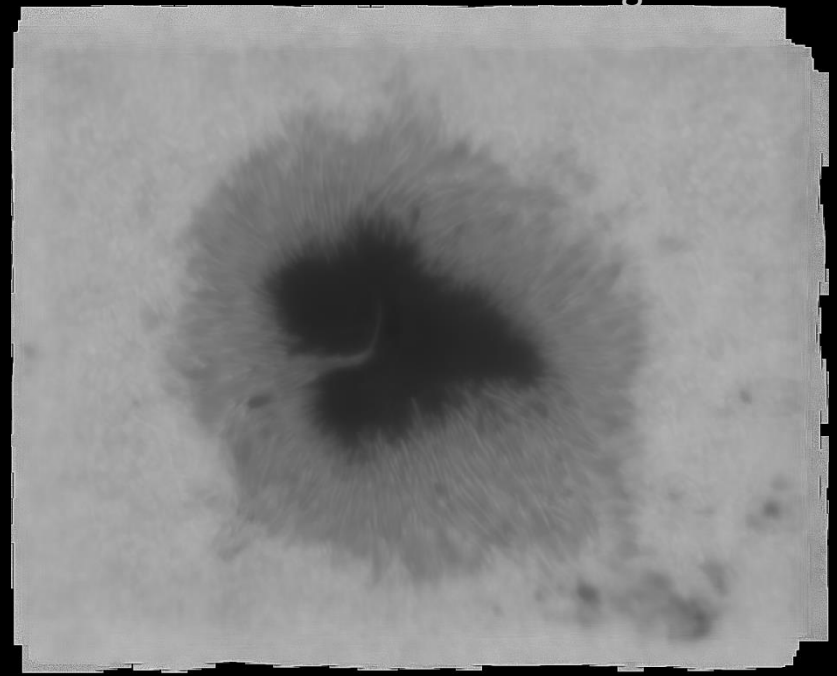
AP 20 : 6589 zones 100 images



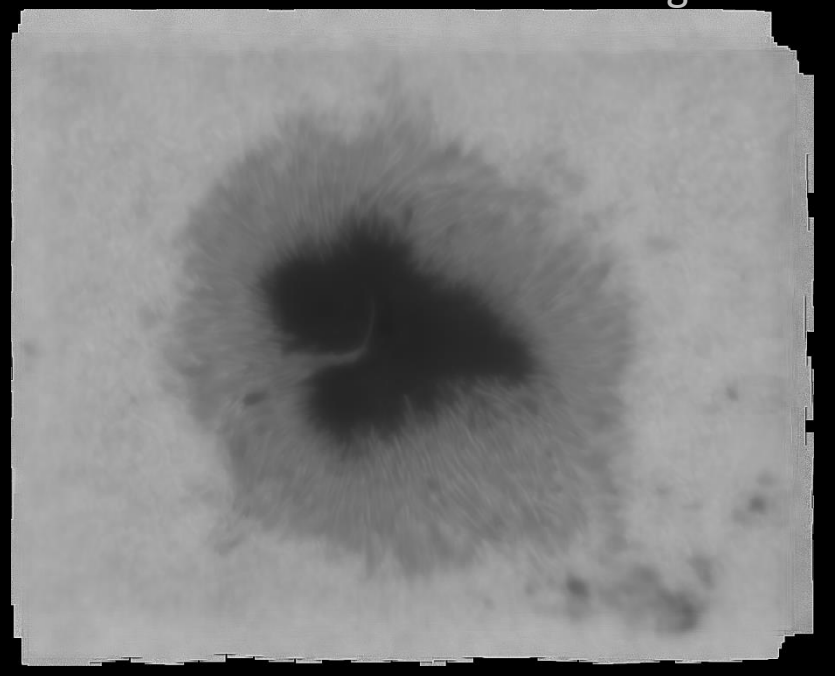
AP 20 : 6589 zones 150 images



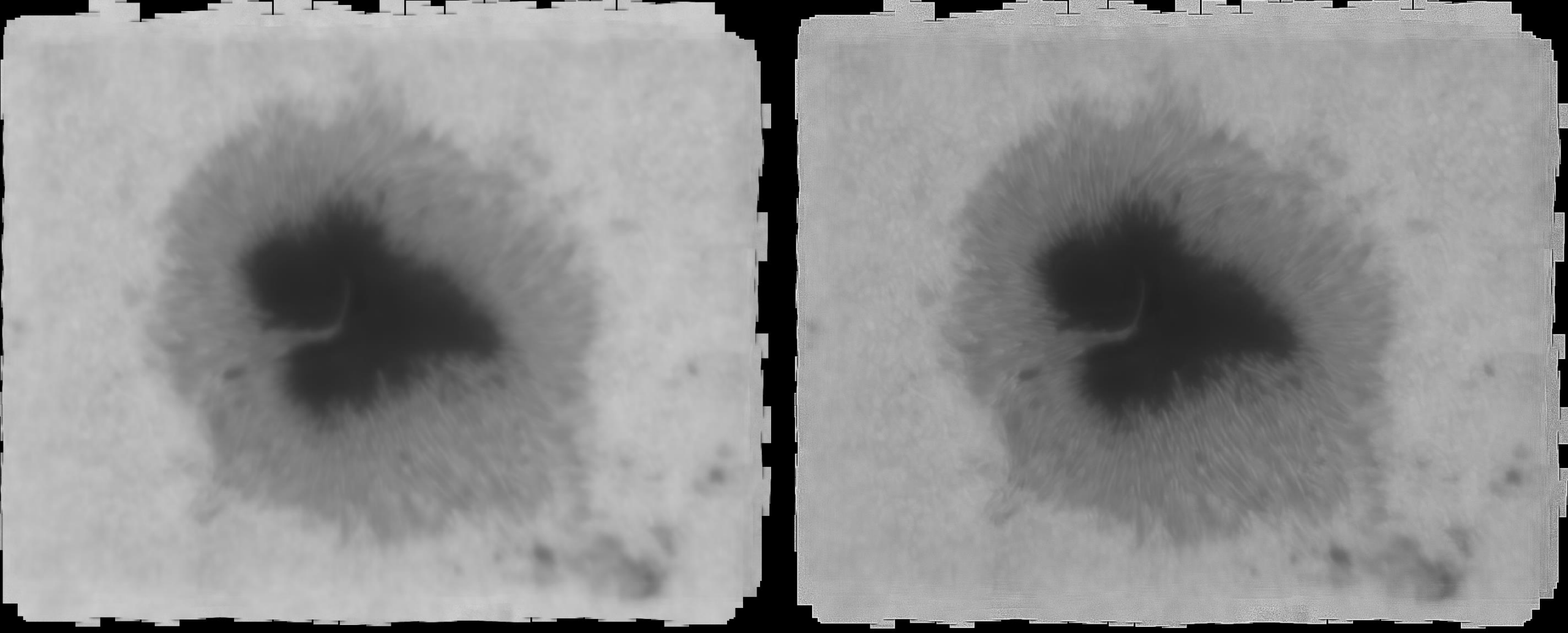
AP 20 : 6589 zones 250 images



AP 20 : 6589 zones 350 images



AP 20 : 6589 zones 500 images



AP 20 : 6589 zones 125 images

6) Post traitement par ondelettes dans Registax 6.0

Registax processing TIFs: D:\ATELIER ABBADIA\AS_f125\Moon_141214_g3_ap6589.tif

Select | MRU | Flat/Dark/Reference | Tools | Settings | Cancel | Pause | About | CPUs :

Align | Stack | Wavelet | File Version: 6.1.0.0 | 02-04-2011 11:00 | Memory Used/Free/Total: 151/3366/4096Mb

Process | Do All | Save image | Realign_with Processed | Stack Again | Show Full Image | Show AlignPoints | Show Processing Area

Wavelets Reset Wavelets

Automatic

Hold Wavelet Setting

Waveletscheme

Dyadic (2^n) Linear

Initial Layer 1 Step Increment 0

Wavelet filter

Denoise Gaussian

Use Linked Wavelets

Layer	Denoise	Sharpen	Preview
1	0,00	0,000	-5.0
2	0,00	0,000	-5.0
3	0,00	0,100	1.00
4	0,00	0,100	1.00
5	0,00	0,100	1.00
6	0,00	0,100	1.00

Available schemes

Load Scheme | Save Scheme

Functions

Histogram | Gamma | Colour Mixing

View Zoomed | View Compare | View Stacksize

Flip and Rotate | RGB Align | RGB Balance

Resize Image | Denoise/ Deringing | Wavelet Filter

Masking | Show Linegraph | Cropping Area

Contrast/Brightness Hold Reset

Contrast 70 Brightness 14

Copy To Load to Difference

Toggle

Current Image

Clipboard Image

Use file from Clipboard

100% | Calculating wavelets done | X=1034 Y=1133 Stack=1 RGB=raw(0 0 0)

Registax processing TIFs: D:\ATELIER ABBADIA\AS_f125\Moon_141214_g3_ap6589.tif

Select | MRU | Flat/Dark/Reference | Tools | Settings | Cancel | Pause | About | CPUs : 8 | Fermer

Align | Stack | Wavelet | File Version: 6.1.0.0 | 02-04-2011 11:00 | Memory Used/Free/Total: 162/3356/4096Mb

Process | Do All | Save image | Realign_with Processed | Stack Again | Show Full Image | Show Processing Area | Show AlignPoints

Wavelets Reset Wavelets

Automatic

Hold Wavelet Setting

Waveletscheme: Dyadic (2^n) / Linear

Initial Layer 1 | Step Increment 0

Wavelet filter: Default / Gaussian

Use Linked Wavelets

Layer	Denoise	Sharpen	Preview
1	0,30	0,320	60,7
2	0,00	0,000	1.0
3	0,00	0,100	1.0
4	0,00	0,100	1.0
5	0,00	0,100	1.0
6	0,00	0,100	1.0

Available schemes

Load Scheme | Save Scheme

Functions

Histogram | Gamma | Colour Mixing | View Zoomed | View Compare | View Stacksize | Flip and Rotate | RGB Align | RGB Balance | Resize Image | Denoise/ Deringing | Wavelet Filter | Masking | Show Linegraph | Cropping Area

Contrast/Brightness Hold Reset

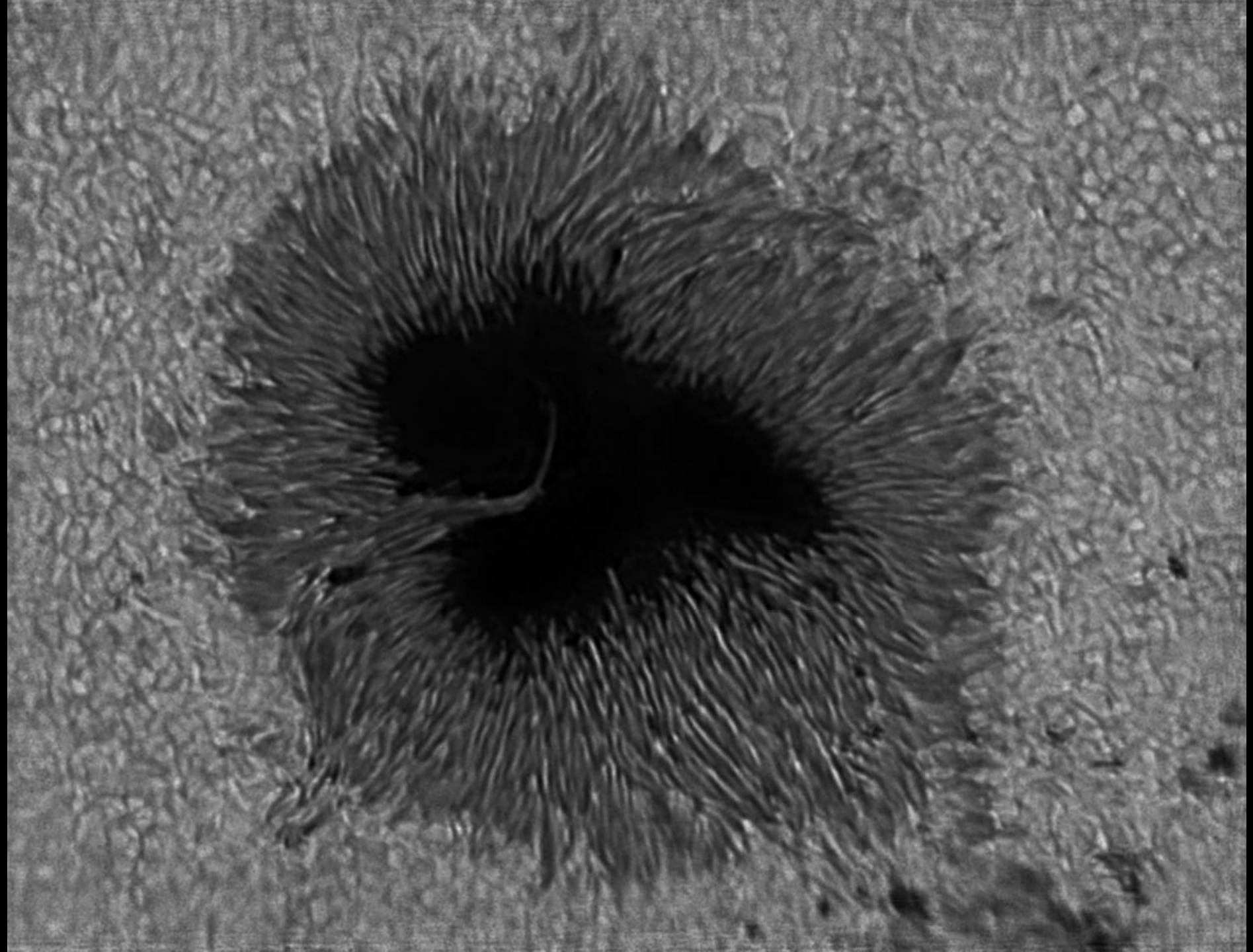
Contrast 70 | Brightness 14

Copy To | Load to | Difference

Toggle: Current Image / Clipboard Image

Use file from Clipboard

100% | Do_all processing | X=1275 Y=2 Stack=1 RGB=raw(0 0 0)



7) Masque flou dans imppg

D:\ATELIER ABBADIA\AS_f125\Moon_141214_g3_ap6589.tif [100%] – ImPPG

File Edit Settings View Tools About

Lucy-Richardson deconvolution

Sigma: 1.3000

Iterations: 0

Prevent ringing

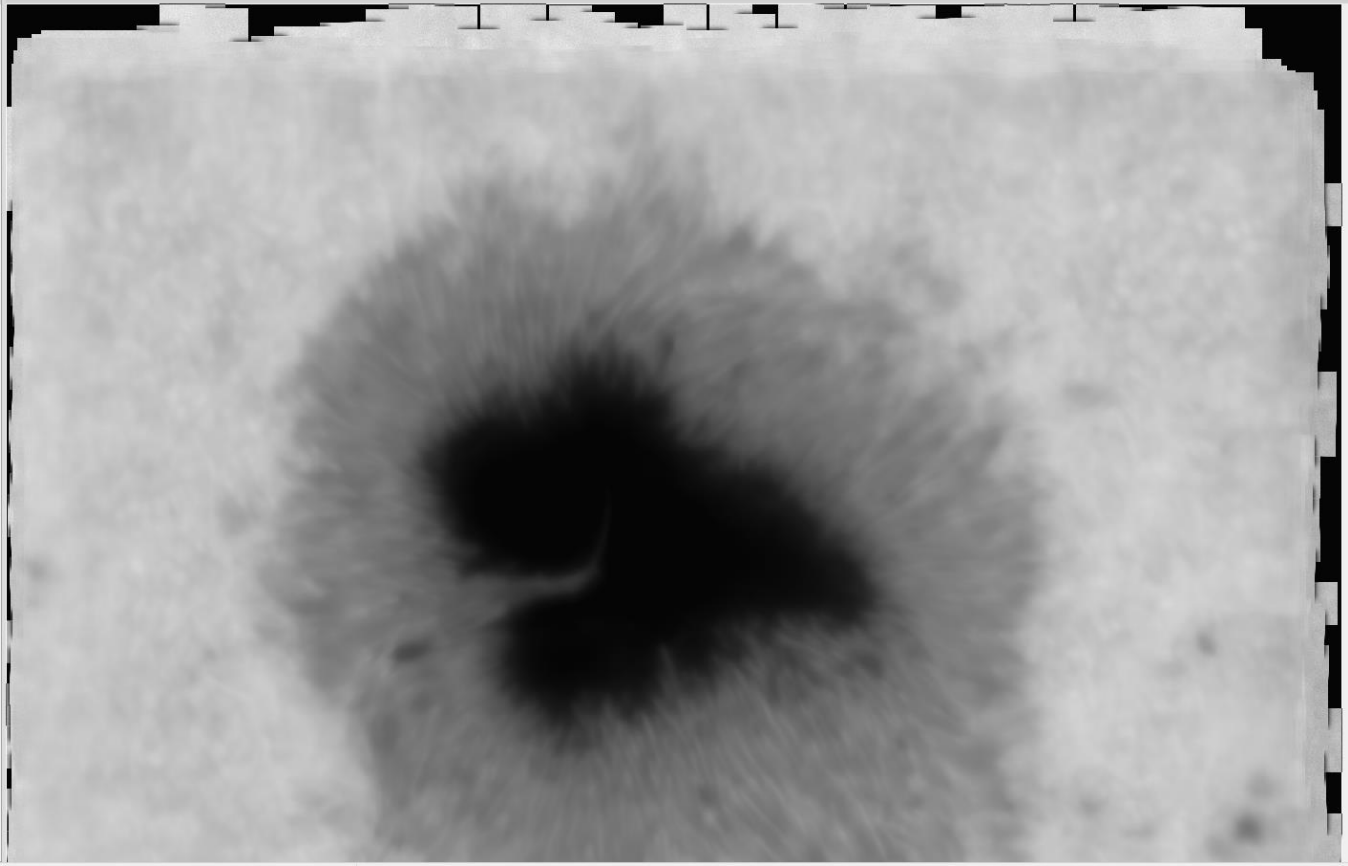
reset disable

Unsharp masking

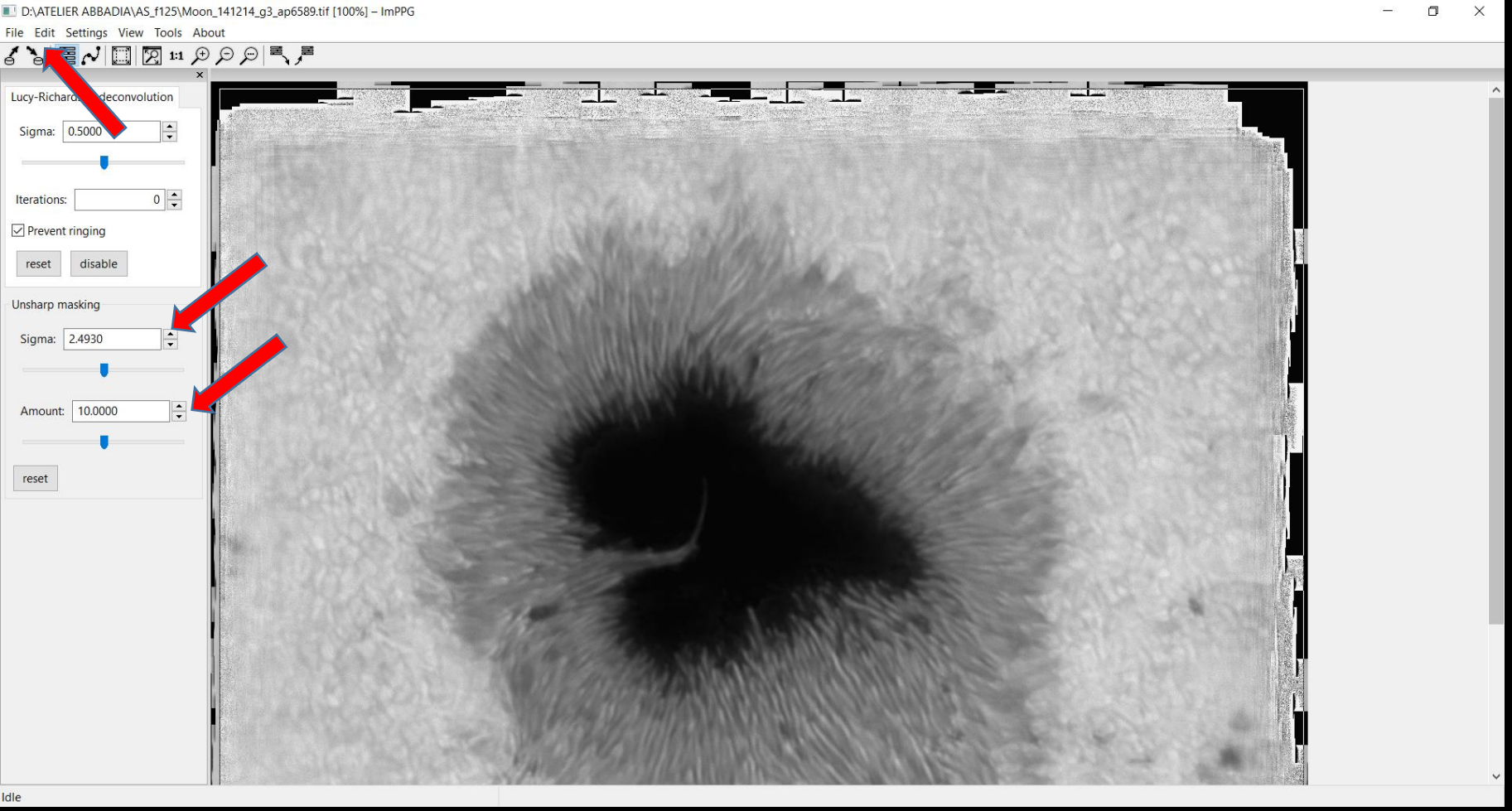
Sigma: 1.3000

Amount: 1.0000

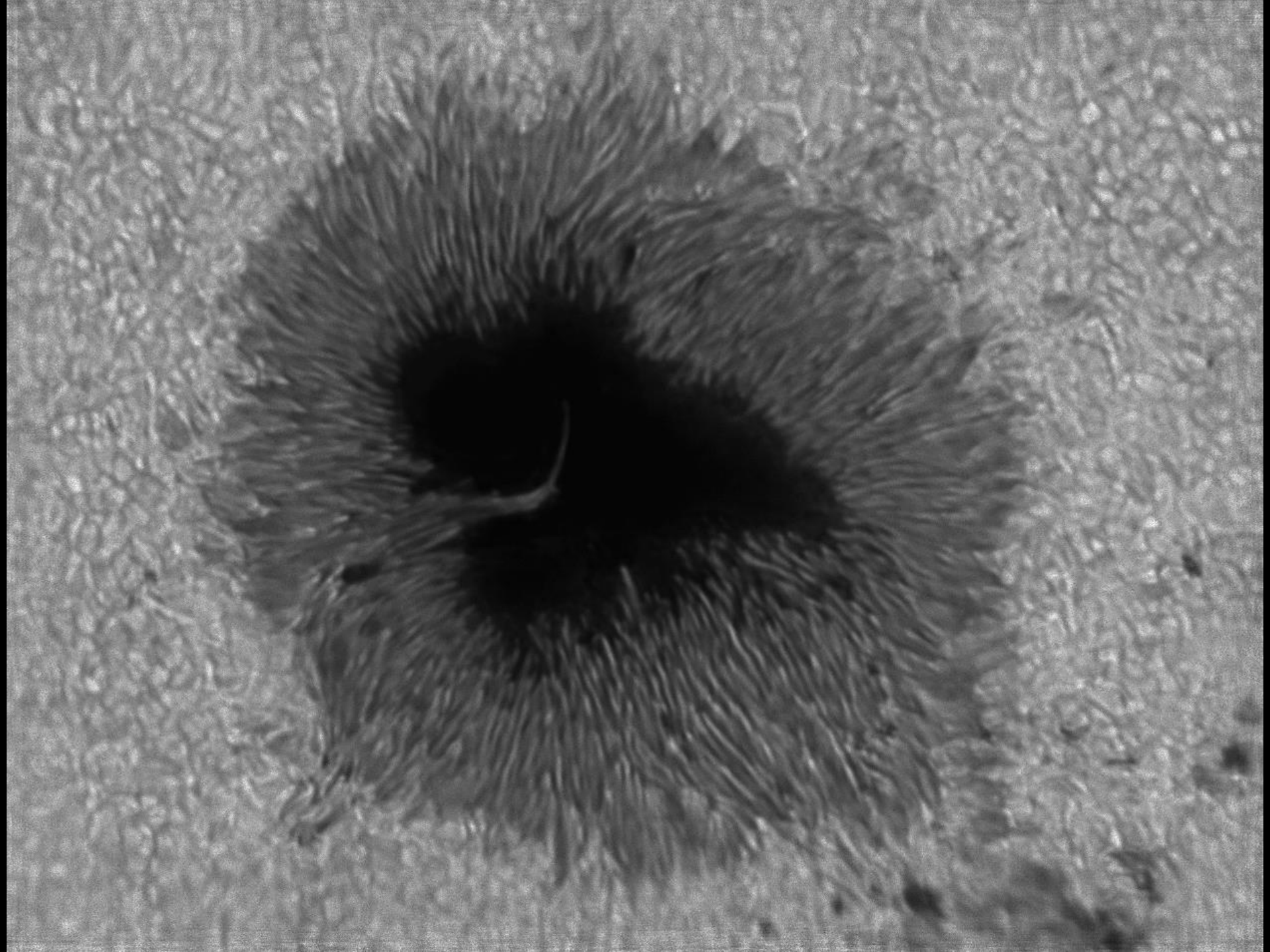
reset



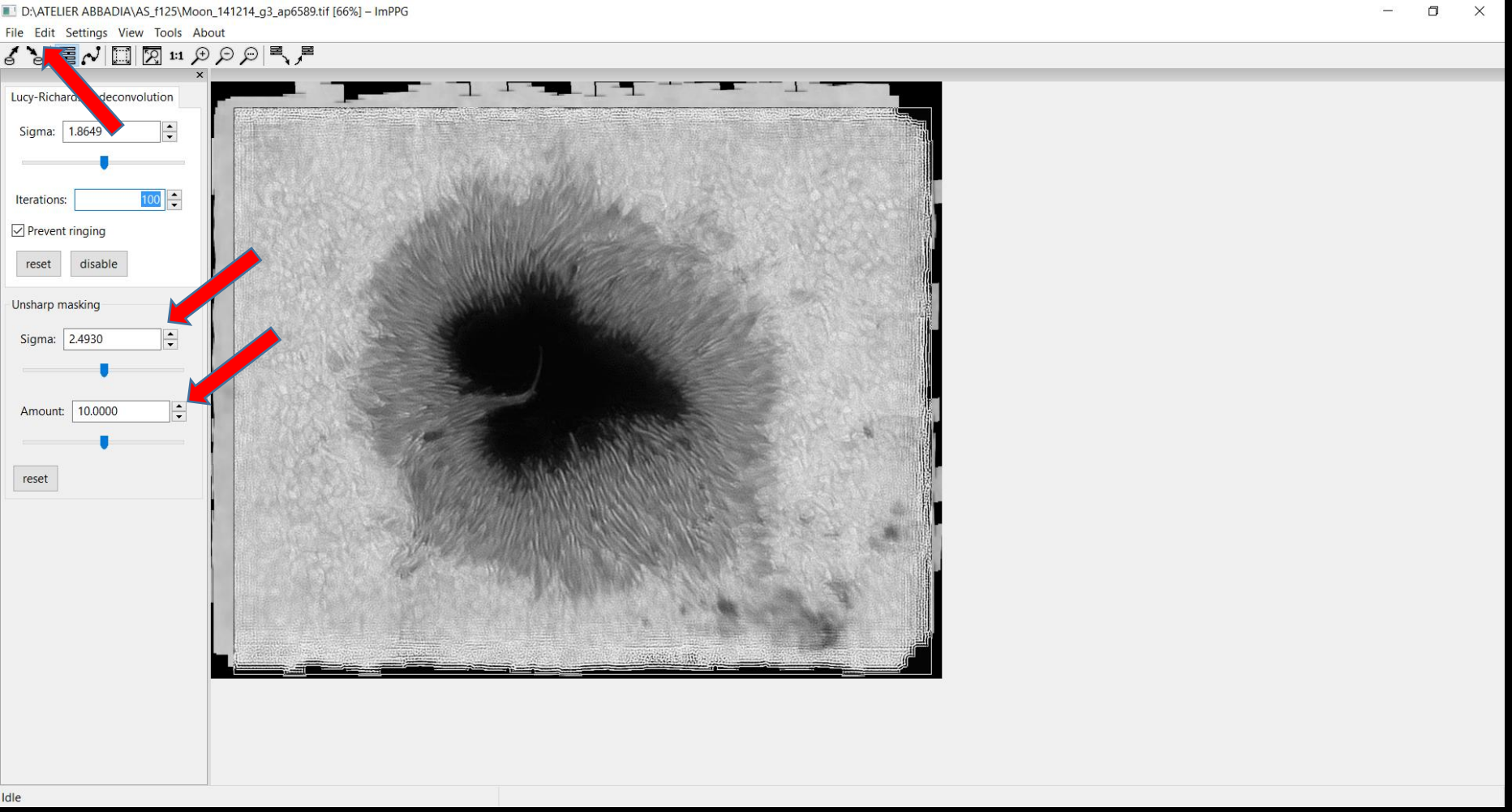
Idle



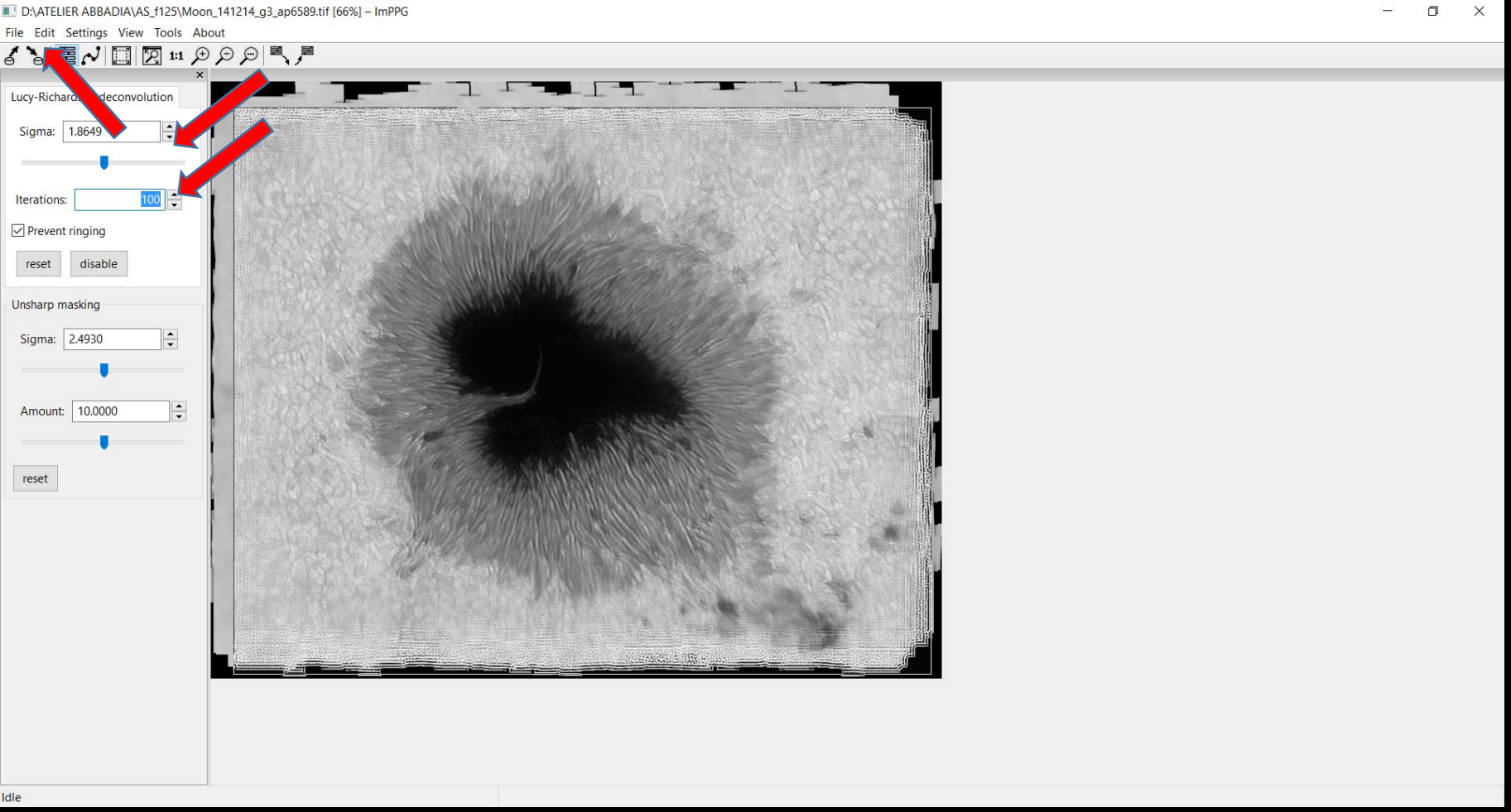
- Régler l'Amount à sa valeur maximale (10).
- Augmenter ensuite le Sigma pour obtenir le meilleur compromis.
- Cliquer sur « Edit » puis enregistrer via le menu « File ».



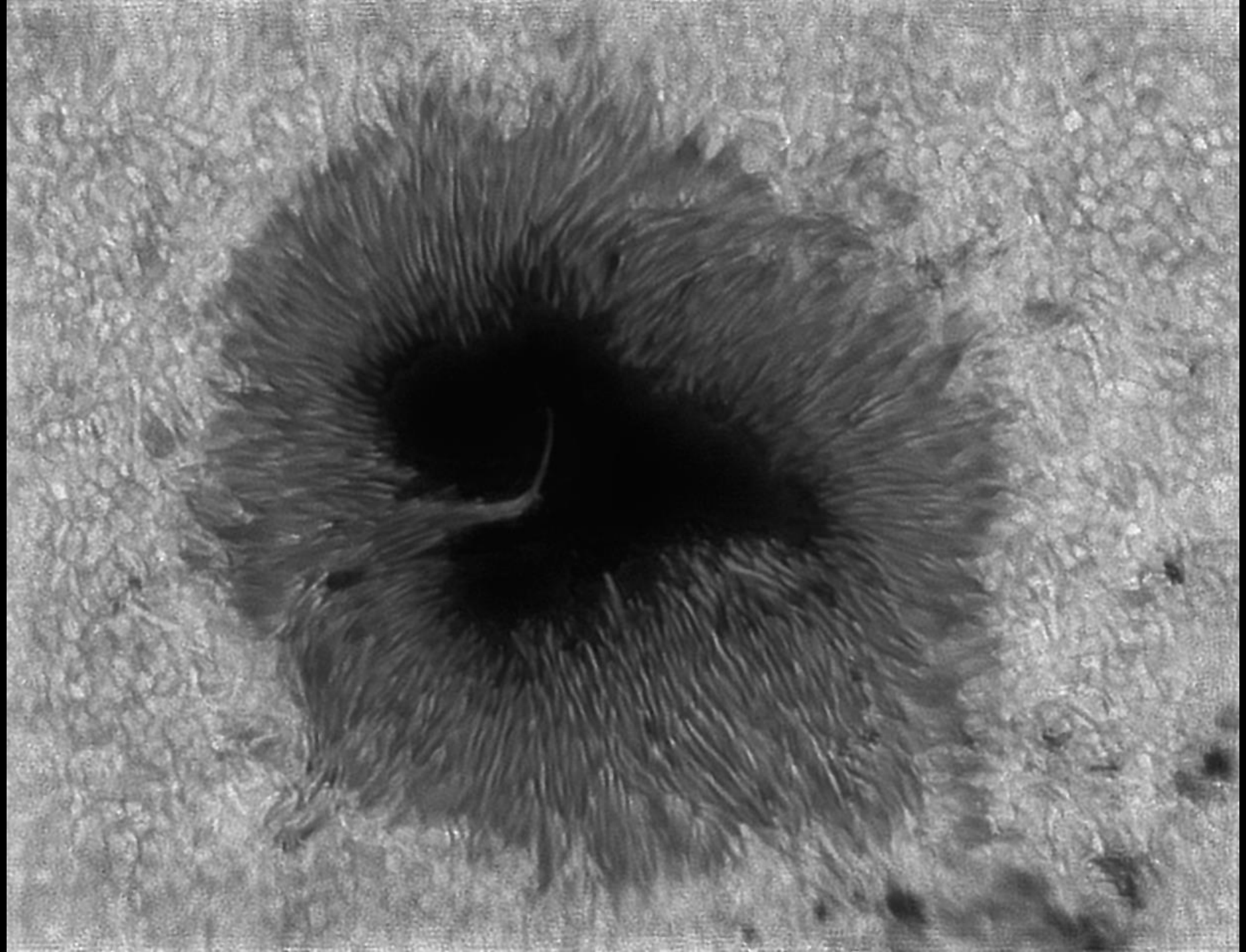
8) Masque flou puis Lucy-Richardson dans imppg



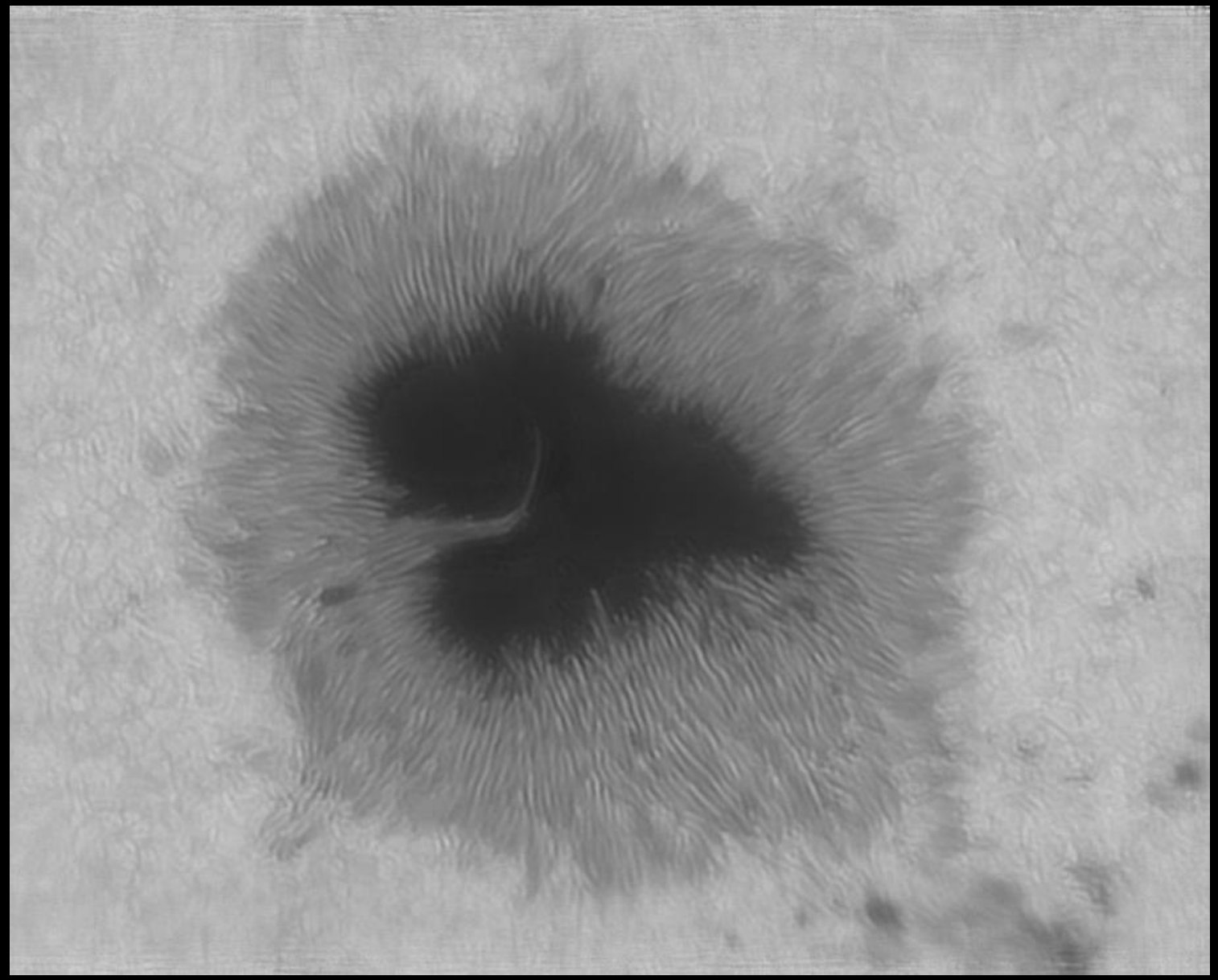
- Après réalisation du masque flou, tenter la déconvolution de Lucy Richardson.
- Le nombre d'itération en général à situer entre 50 et 120, définit la netteté.
- Le Sigma définit la largeur du noyau de la transformation gaussienne. Plus Sigma augmente et plus on gagne en netteté … et en amplification des artéfacts.
- Cliquer sur « Edit » puis enregistrer via le menu « File ».



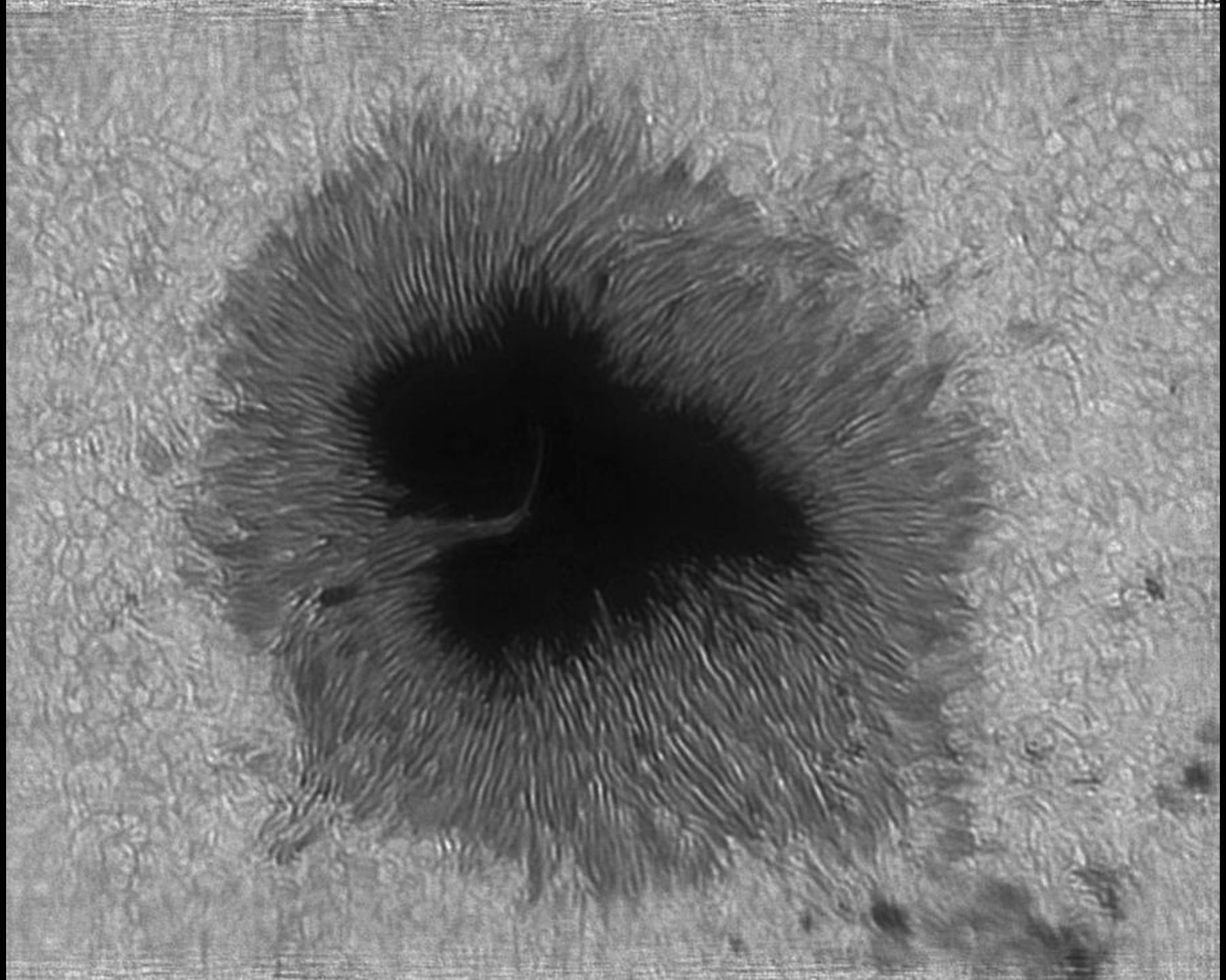
- Régler l'Amount à sa valeur maximale (10).
- Augmenter ensuite le Sigma pour obtenir le meilleur compromis.
- Cliquer sur « Edit » puis enregistrer via le menu « File ».



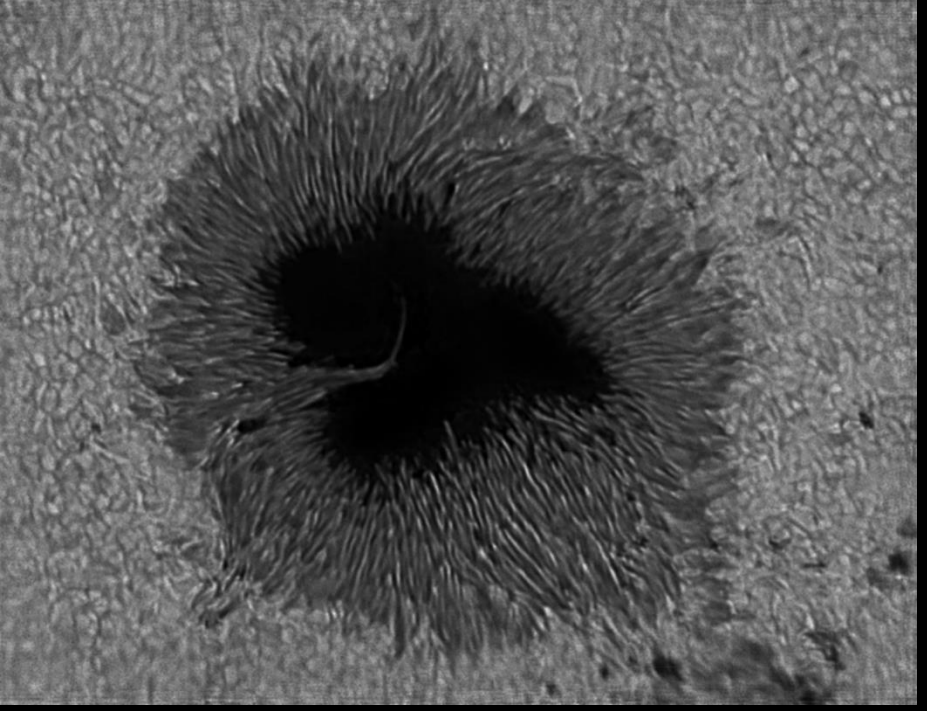
9) Astra Image 4.0



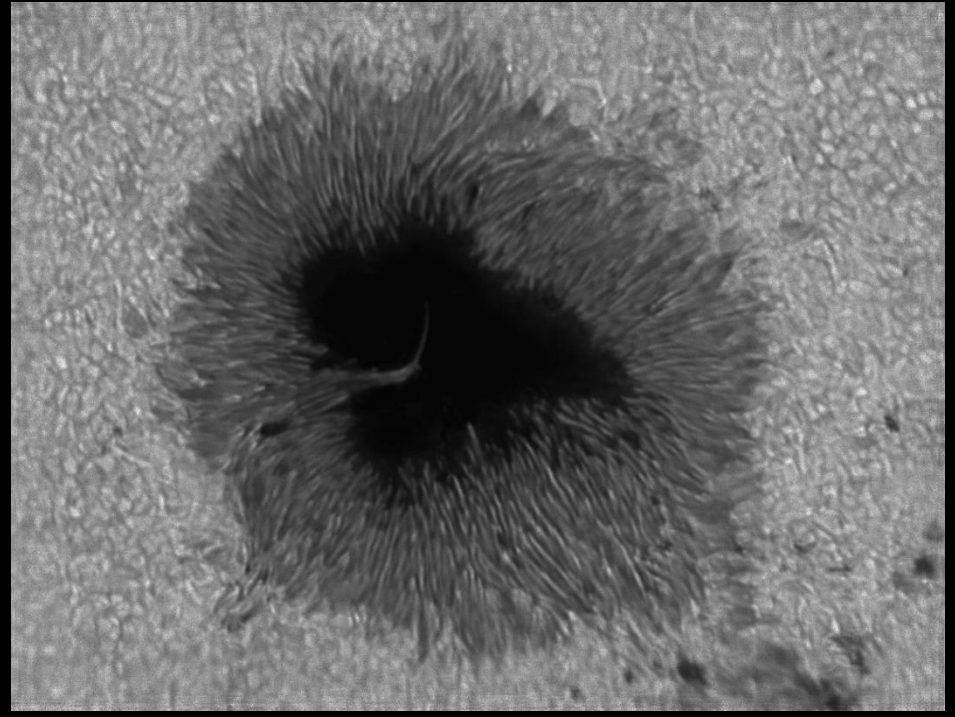
Traitement en Van Cittert + Cauchy.



10) Comparatif

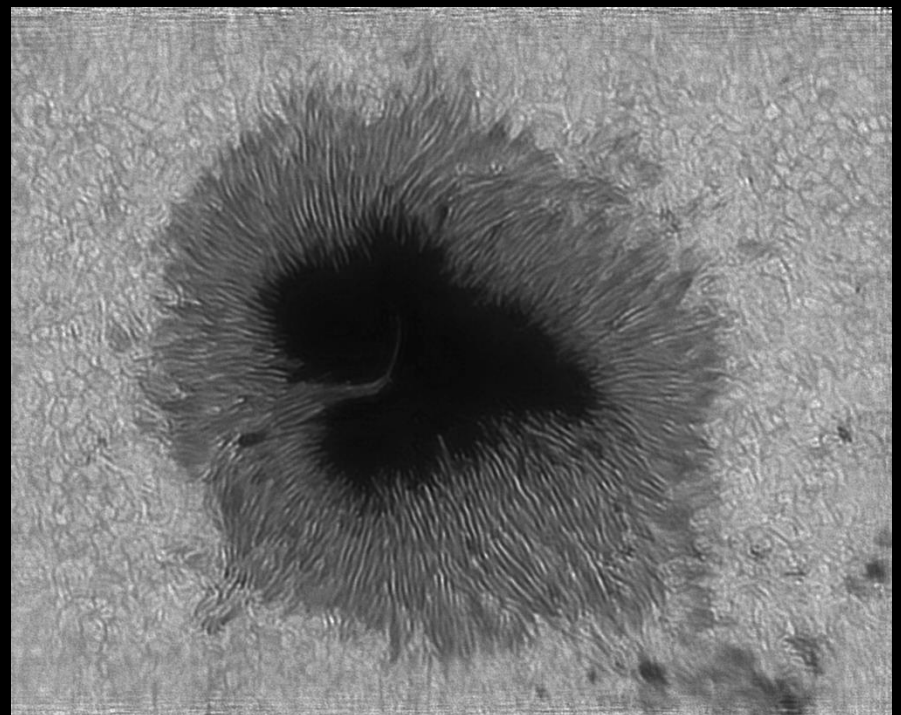


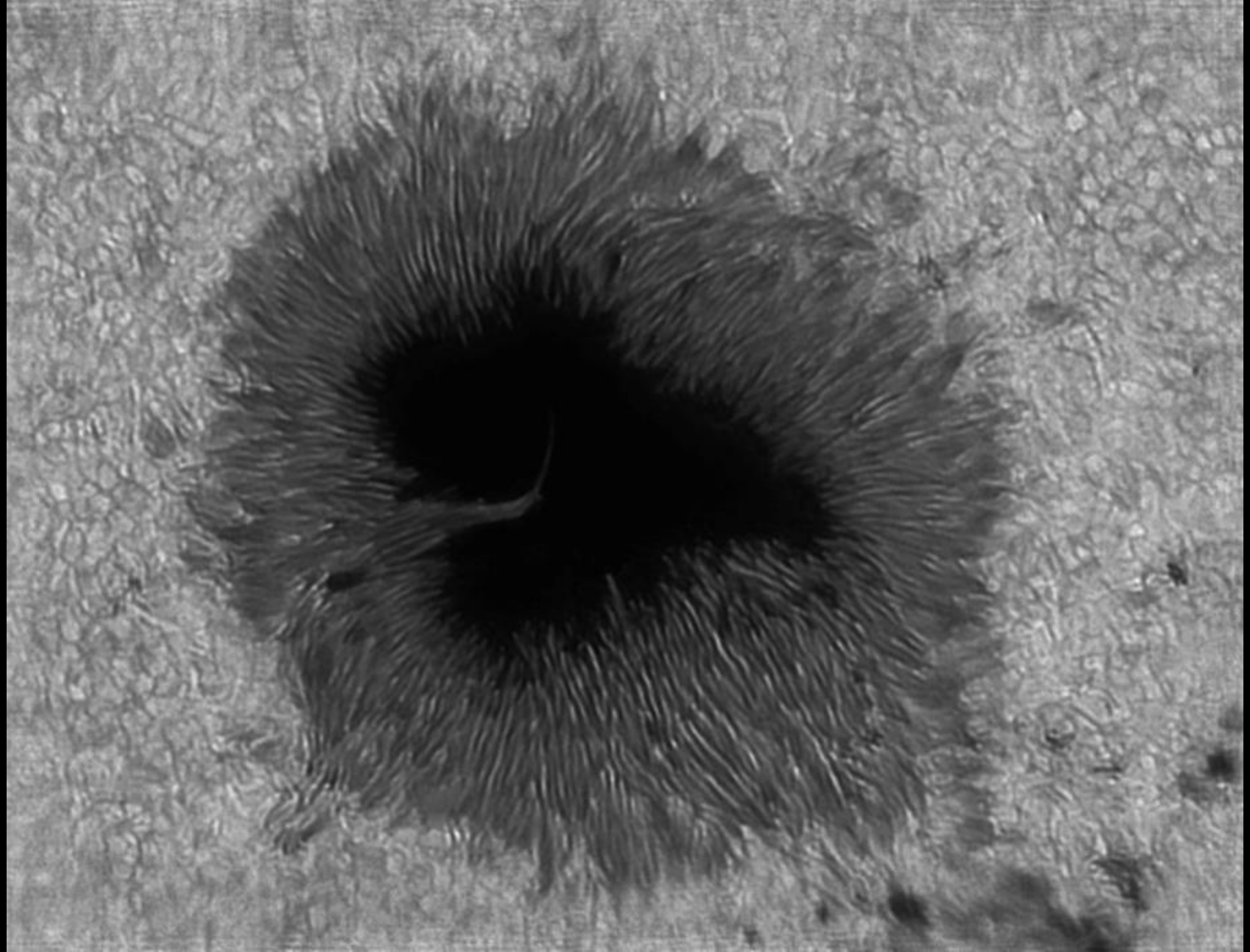
1 : Registax 6.0 :
Ondelettes



2 : Imppg :
Masque flou

3 : Imppg :
Masque flou +
Lucy Richardson



4 : Astra Image
4.0 :
Van Cittert +
Cauchy

3 + 4 en 50% normal dans PSP