



# Data reduction with Demetra

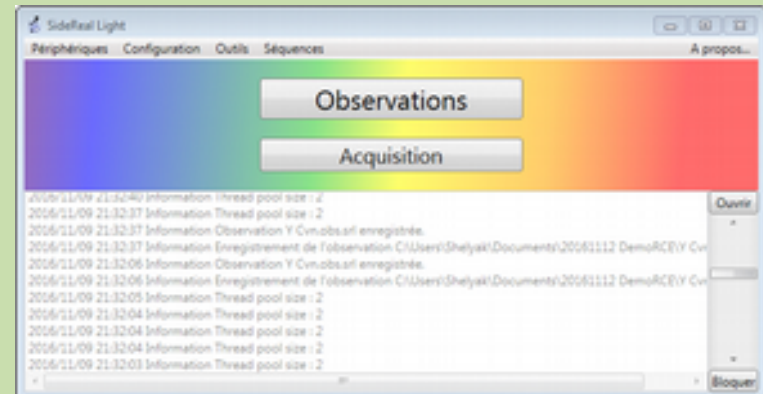
*Sacramento Mountains Spectro Workshop - 2*  
*February 22<sup>nd</sup> - 24<sup>th</sup>, 2019*

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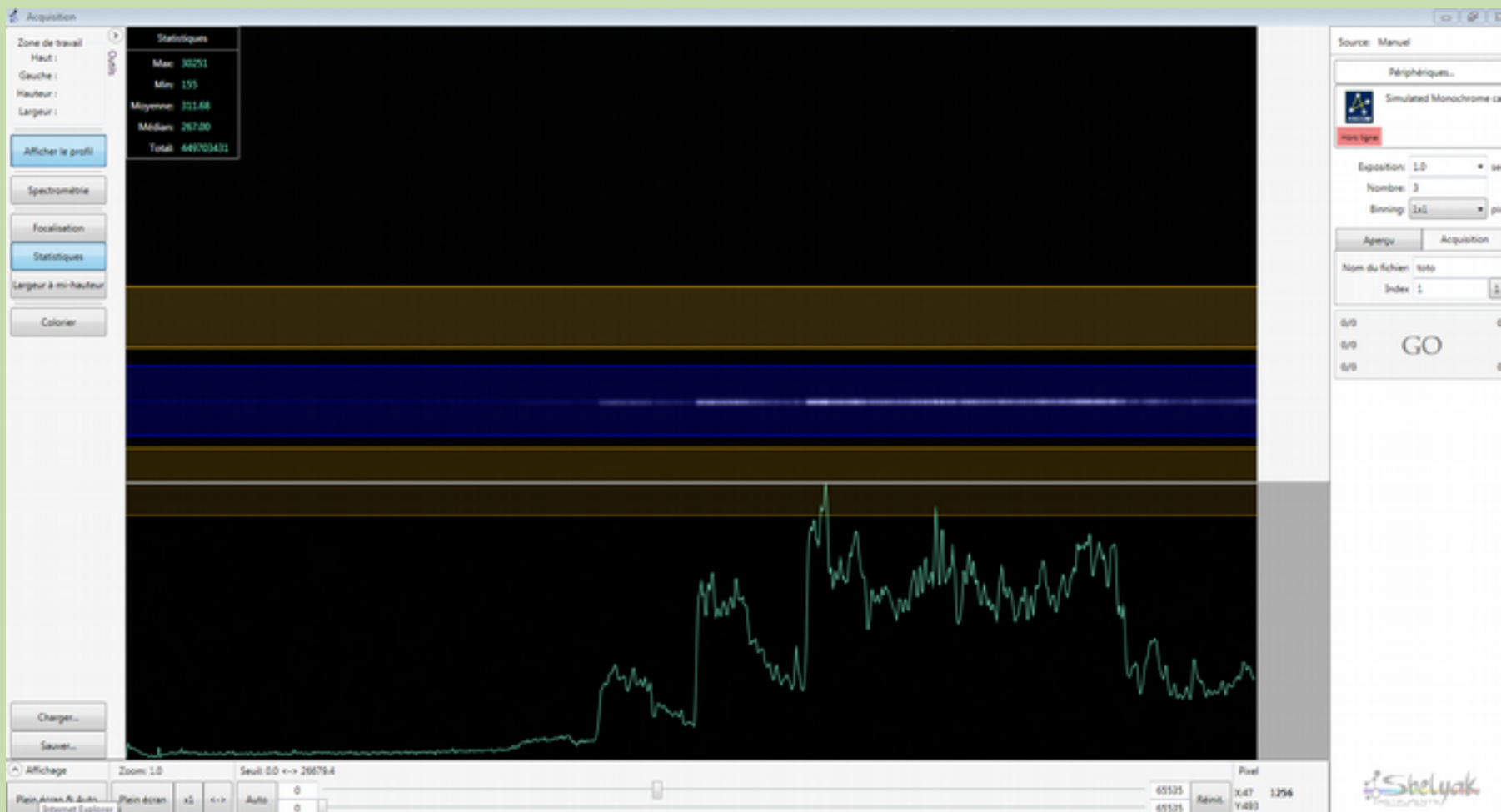


- Introduction to Demetra
- Demo live

- A single software for both acquisition & reduction
  - Dedicated to Alpy (eShel soon)
- Observing session management
- Observation = one images set
- Useful information during acquisition
- Color coding
  - Green = I can go to bed
- Includes a log book
- Data reduction in one click...  
... and the full control given to the observer
- Only based on standard formats







Session

Session d'observation

V:\Documents\2016\112 DemoRCE

Changer... Explorer

Archiver...

Paramètres de session

Note

08/11/2016-17:27 Session de dém  
Je reprends les images réalisées à

Éditeur externe date/heure

Liste des observations

- Vega
- γ Cyg
- gem Cas
- Arcturus

Observation: Vega

Export... Renommer...

Definition Images Réduction de données Exploitation

Sélection du panier Panier

Object

Offset

Dark

Flat

Calibration

Images

Vega\_0h\_20150820\_220016-1.fr

Vega\_0h\_20150820\_220016-2.fr

Vega\_0h\_20150820\_220016-3.fr

Vega\_0h\_20150820\_220016-4.fr

Vega\_0h\_20150820\_220016-5.fr

Vega\_0h\_20150820\_220016-6.fr

Vega\_0h\_20150820\_220016-7.fr

Aquérir séquence...

Acquérir Ajouter... Enlever

Vega\_0h\_20150820\_220016-5.fr

1 Afficher (1) Spectromètre

Avis	Hauteur	719	Editer
	Bas	644	Editer
Supérieur	Centre	579.0	Editer
	Hauteur	86	Editer
Bas	Hauteur	521	Editer
	Bas	438	Editer

Valider

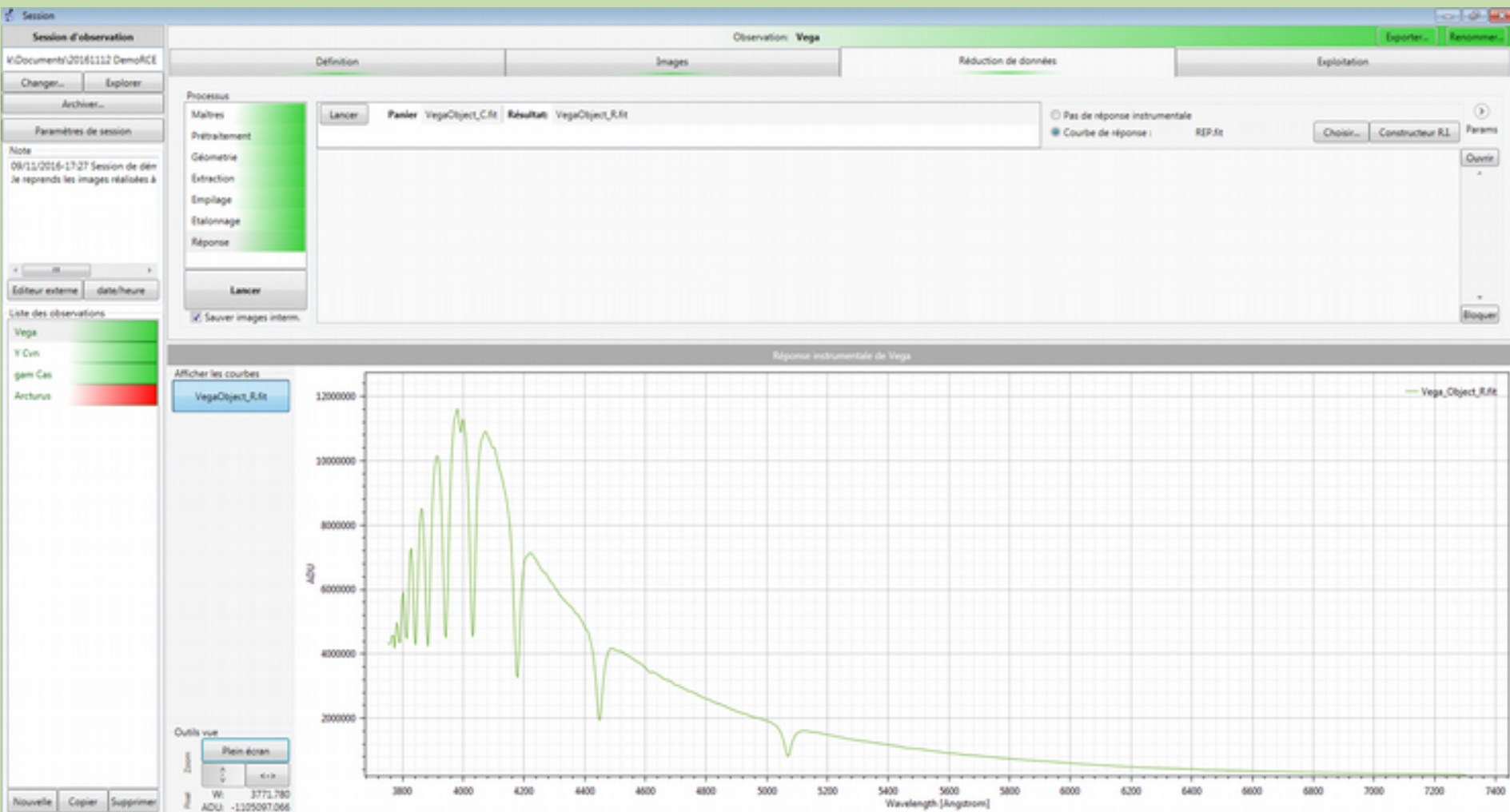
Affichage Zoom: 1.2 Seuil: 208.9 <-> 2855.5

Pixel

65535 X:202 Y:827

65535 Réinit. X:202 Y:827

Nouvelle Copier Supprimer Plein écran & Auto Plein écran x1 <-> Auto 0 0



Session

Observing session

slyak\Demetra\data\O.Garde\EShel

Change folder Explore folder

Create archive...

Session parameters

Note

External editor Add date/time

Observation list

Tau

Tau backup 1.obs.txt

New Copy Remove

Observation: **Tau** Export... Rename...

Definition Images Data reduction Output

Process

Masters Preprocess Order detection Extraction (o) Geometry Stack Calibration Response Scale Crop

Run

Save Intern. images

Compute **Tauflat1\_M.fit** Order 31 Position X 687 Y 889.83 Boundaries Low

Orders to process: Order range From 30 To 57 Set

Orders detection: Edit parameters...

2019/02/19 10:22:39 Information Loading sources files for process step ordersExtraction...

2019/02/19 10:22:39 Information Loading sources files for process step ordersDetection...

2019/02/19 10:20:59 Information Loading sources files for process step ordersExtraction...

2019/02/19 10:20:59 Information Loading sources files for process step ordersDetection...

2019/02/19 10:05:02 Information Deleting obsolete sources files for process step crop...

2019/02/19 10:05:02 Information Loading sources files for process step crop...

2019/02/19 10:04:59 Scale Information Scale process applied for order Order57 : coefficient0.425321249566117

2019/02/19 10:04:59 Scale Information Scale process applied for order Order56 : coefficient0.425321249566117

2019/02/19 10:04:59 Scale Information Scale process applied for order Order55 : coefficient0.425321249566117

2019/02/19 10:04:59 Scale Information Scale process applied for order Order54 : coefficient0.425321249566117

2019/02/19 10:04:58 Scale Information Scale process applied for order Order53 : coefficient0.425321249566117

2019/02/19 10:04:58 Scale Information Scale process applied for order Order52 : coefficient0.425321249566117

2019/02/19 10:04:58 Scale Information Scale process applied for order Order51 : coefficient0.425321249566117

2019/02/19 10:04:58 Scale Information Scale process applied for order Order50 : coefficient0.425321249566117

Order detection

Show Order detection

Background image

Calibration

Auto detection

Reference order

Ref. order 34

Ref. order center 6500.256

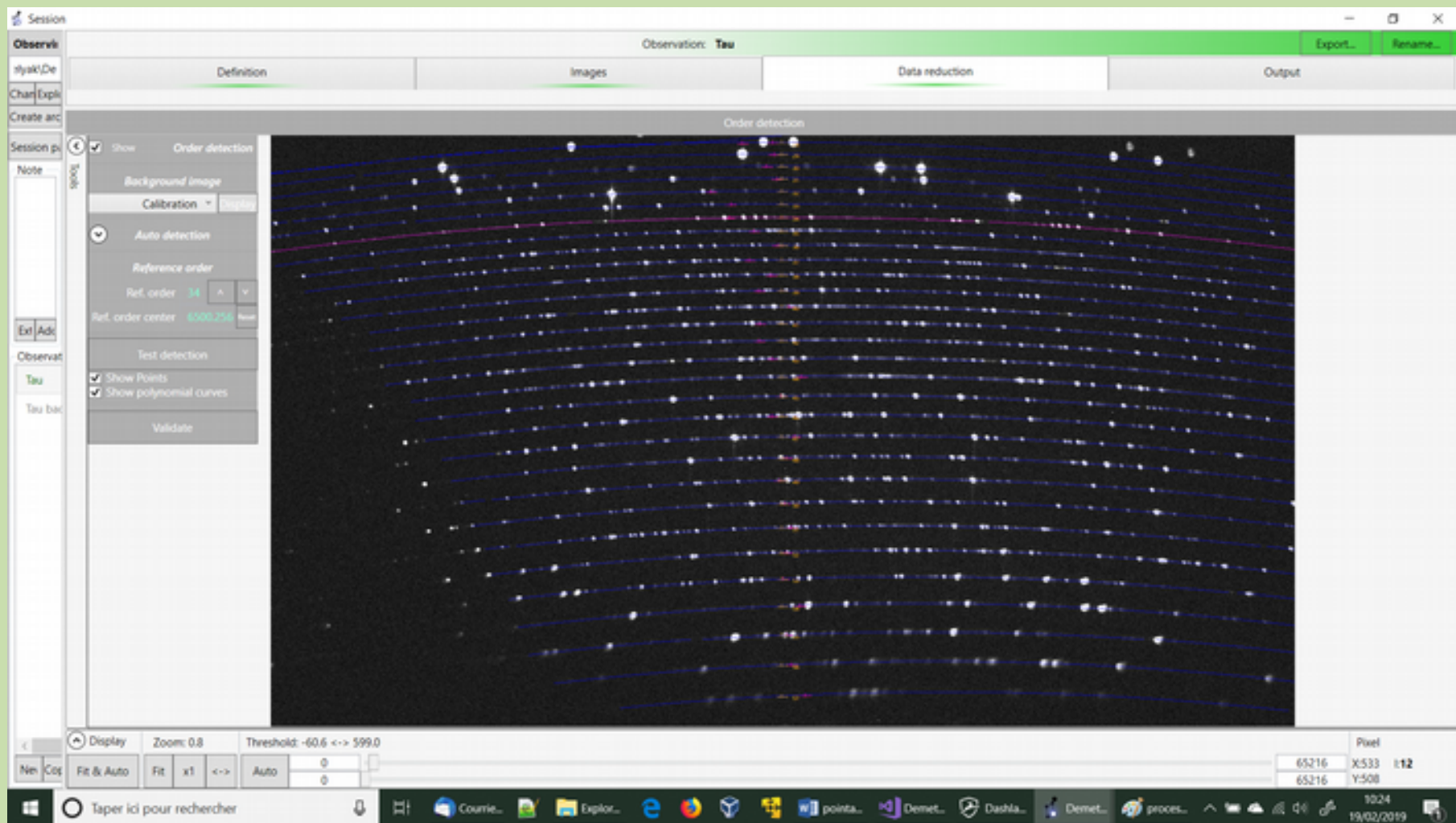
Test detection

Show Points

Show polynomial curves

Stack

10:24 19/02/2019



The screenshot displays the Demetra eShel software interface. The main window is titled "Session" and shows a star field with overlaid diffraction orders. The interface includes a sidebar on the left with various controls, a central display area, and a bottom status bar.

**Session Information:**

- Observation: **Tau**
- Export... | Rename...

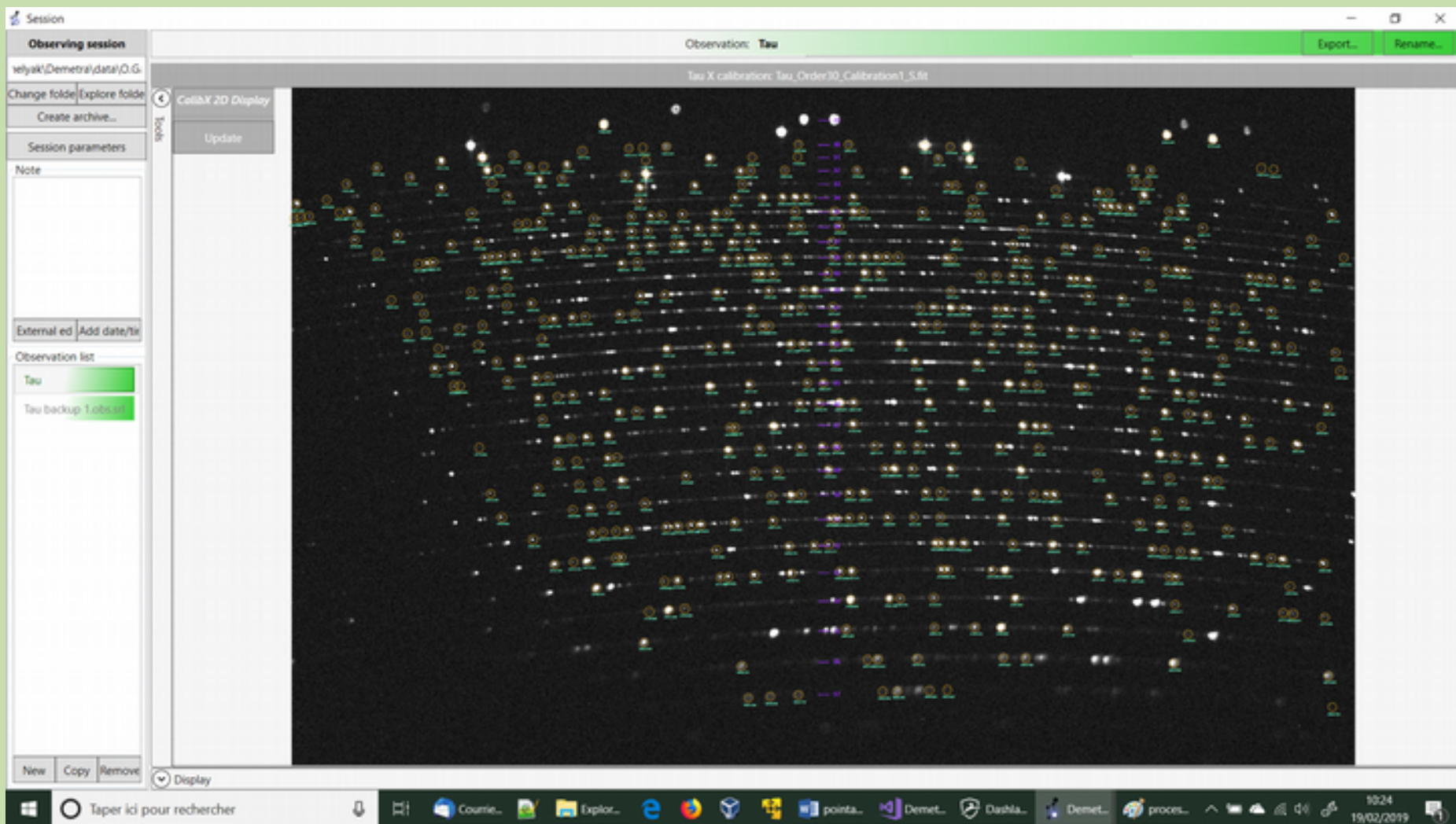
**Order detection controls (left sidebar):**

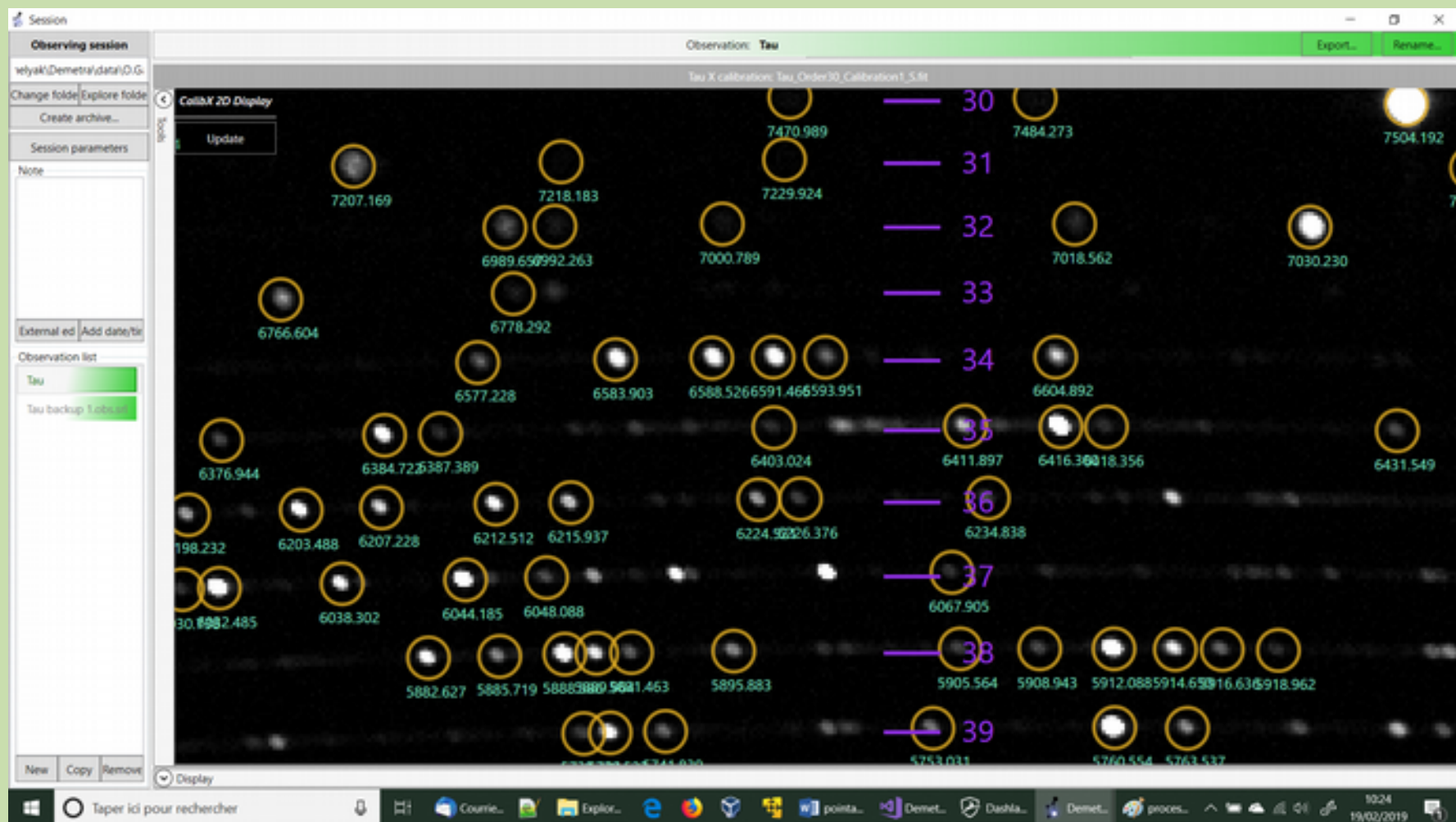
- Show:  Order detection
- Background image: Calibration | Display
- Auto detection:
- Reference order: Ref. order 34 | Ref. order center 6500.256
- Test detection:  Show Points,  Show polynomial curves
- Validate

**Display and Status (bottom):**

- Display: Zoom: 0.8 | Threshold: -60.6 <-> 599.0
- Fit & Auto | Fit | x1 | <-> | Auto
- Pixel: X:533 | Y:508
- Windows taskbar: 19/02/2019 10:24



The screenshot shows the Demetra eShel software interface. At the top, a green header bar displays "Observation: Tau" and "Tau X calibration: Tau\_Order10\_Calibration1\_5fit". Below this, a large central window shows a 2D display of a crystal diffraction pattern, with numerous diffraction spots and a grid of lines. The left sidebar contains a "Session" panel with options like "Observing session", "Change folder", "Session parameters", and "Note". Below this is an "Observation list" with "Tau" selected. At the bottom, a Windows taskbar is visible with various application icons and a system tray showing the date and time as 19/02/2019 10:24.



Session

Observing session

shyak/Demetra/data/D-Garde/eShel

Change folder | Explore folder

Create archive...

Session parameters

Note

External editor | Add date/time

Observation list

- Tau
- Tau backup 1\_obs.orl
- rotation 5
- rotation 6
- rotation 7

New | Copy | Remove

Observation: Tau

Export... | Rename...

Definition | Images | Data reduction | Output

Process

- Extraction (o)
- Geometry
- Stack
- Calibration
- Response
- Scale
- Crop

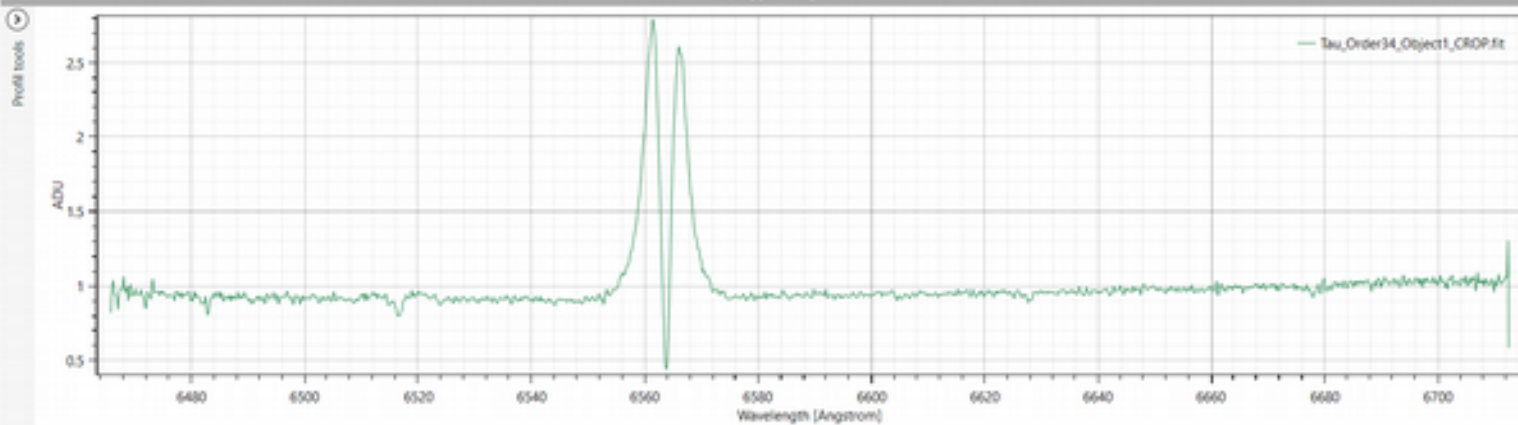
Run

Save Intern. images

Order:  Run all order Current: < 34 > Min 30 Max 57

Run	Object	Tau_Order34_Object1_N.fit	Result: Tau_Order34_Object1_CROP.fit
2019/02/19 11:03:39	Information	Loading sources files for process step ordersExtraction...	
2019/02/19 11:03:39	Information	Loading sources files for process step ordersDetection...	
2019/02/19 10:27:29	Information	Loading sources files for process step ordersExtraction...	
2019/02/19 10:22:39	Information	Loading sources files for process step ordersExtraction...	
2019/02/19 10:22:39	Information	Loading sources files for process step ordersDetection...	
2019/02/19 10:20:59	Information	Loading sources files for process step ordersExtraction...	
2019/02/19 10:20:59	Information	Loading sources files for process step ordersDetection...	
2019/02/19 10:05:02	Information	Deleting obsolete sources files for process step crop...	
2019/02/19 10:05:02	Information	Loading sources files for process step crop...	
2019/02/19 10:04:59	Scale Information	Scale process applied for order Order57 : coefficient0.425321249566117	

Tau cropped image



Profile tools

ADU

Wavelength [Angstrom]

Tau\_Order34\_Object1\_CROP.fit



# Merci !

Vous ne verrez  
plus les étoiles  
comme avant !



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