

Analysis in the uv -plane



Aranca Castro-Carrizo

image plane

uv plane

brightness (x,y)

visibility (u,v)

$\longleftrightarrow \mathcal{FT} \longrightarrow$

What we want
to obtain

What we
obtain with an
interferometer

Calibration
Gridding
FFT
Cleaning

image plane

uv plane

brightness (x,y)

visibility (u,v) ^{instr}

\approx

Calibration

brightness (x,y) ^{uv}

Gridding

FFT

Cleaning

visibility (u,v)

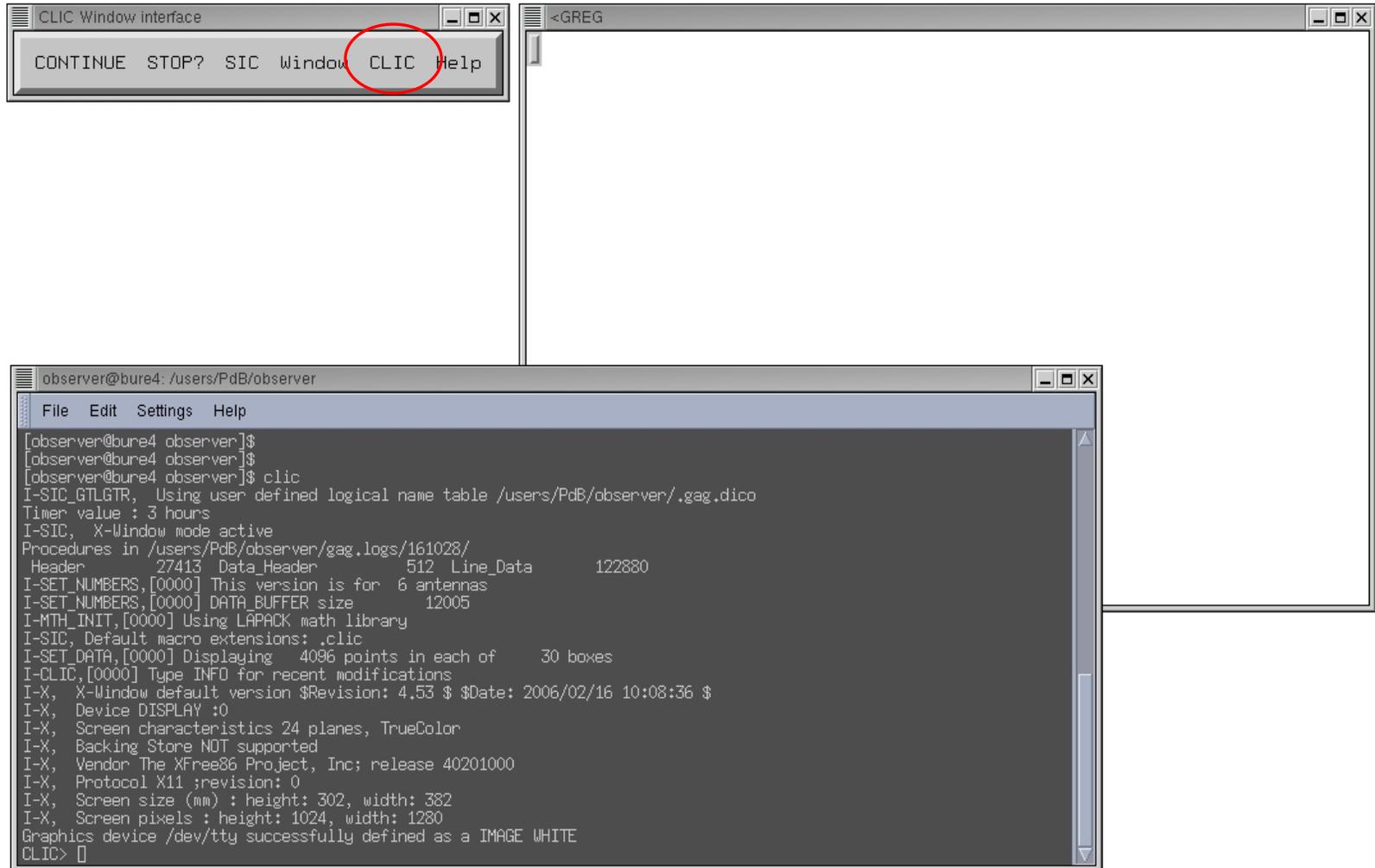
- Data processed enough to have removed all instrumental contribution

- Data raw enough to access to observational characteristics: baseline, scan, weight, etc

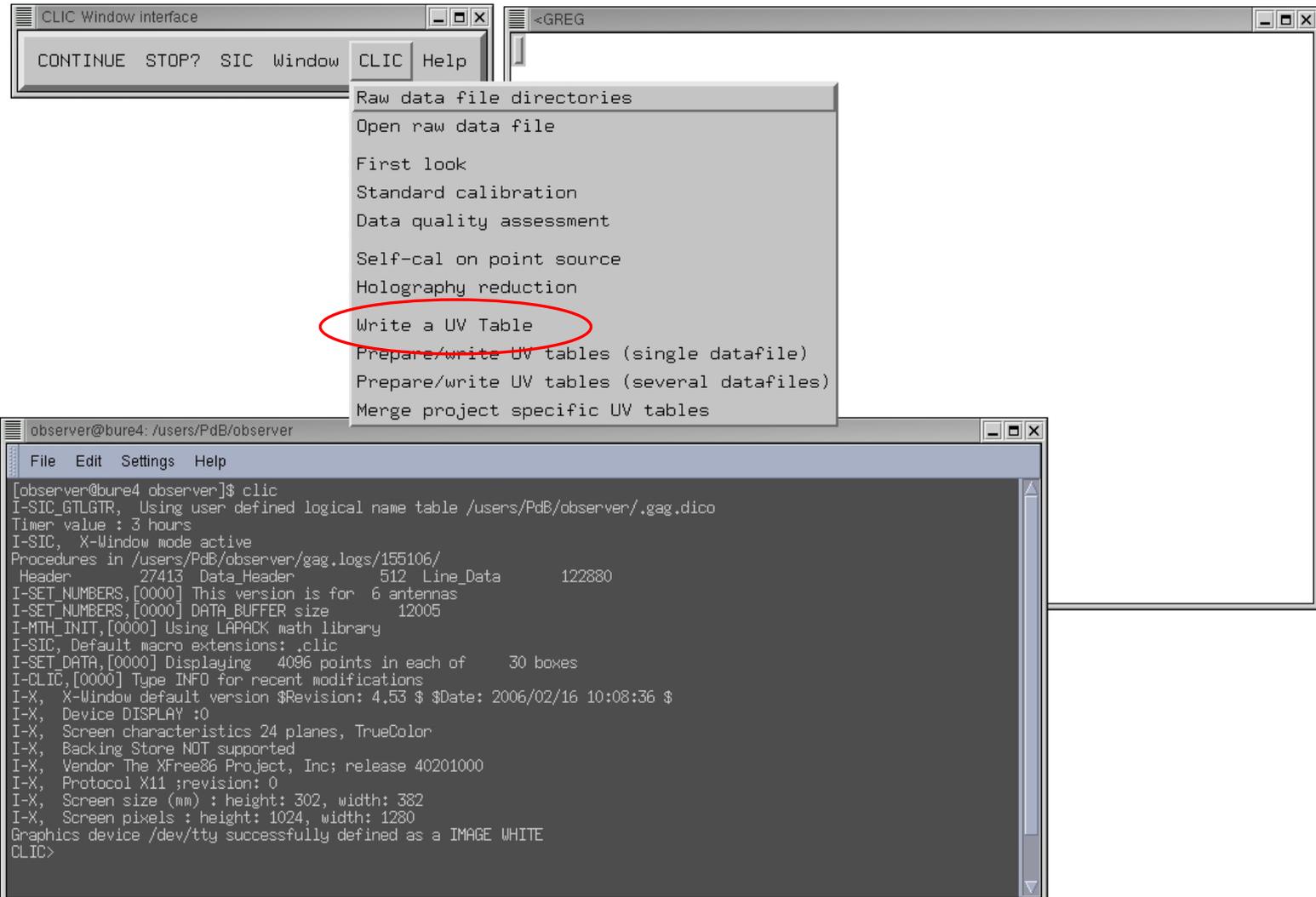
- Data not yet affected by the 'imaging process': assumptions, interpolations, computations, etc

Let's create a table ("mytable".uvt),
in **CLIC**

Creating a *uv*-table; **CLIC**



Creating a *uv*-table; CLIC



Creating a *uv*-table; CLIC

Simple UV Table creation

GO ABORT HELP

CREATE THE TABLE

Use atm. phase correction? Yes

Input Data File Name ? /project/qd12/20-oct-2006-qd12.hpb File

Output UV Table Name ? ~/arancha/mitablã

New Table? Yes

Source Name ? Betelgeuse

R.A. & Dec. Offsets (for Mosaics)? 0 0

First and last scan ? 0 1000

Min. Data quality ? AVERAGE Choices

Receiver number ? 1 Choices

Line or Continuum ? LINE Choices

Band Used ? USB Choices

Use L01 ? Yes

Use L02 ? Yes

Use L03 ? No

Use L04 ? No

Use L05 ? No

Use L06 ? No

Change line parameter ? No

Resample spectral data ? No

Line parameters Line Line parameters Help

Resampling parameters Resampling Resampling parameters Help

CLIC Window

CONTINUE

observer@

```
File Edit
[observer@b
[observer@b
I-SIC_GTLGT
Timer value
I-SIC, X-W
Procedures
Header
I-SET_NUMBE
I-SET_NUMBE
I-MTH_INIT,
I-SIC, Defa
I-SET_DATA,
I-CLIC, [000
I-X, X-Win
I-X, Devic
I-X, Scree
I-X, Backl
I-X, Vendo
I-X, Proto
I-X, Scree
I-X, Scree
Graphics de
CLIC>
CLIC> []
```

```
emacs@bure4
File Edit Options Buffers Tools Help

mitabla.uvt-table.clic

file in "/project/qd12/13-sep-2006-qd12.hpb"

set default
set scan 0 10000
set offset 0 0
set receiver 1
set quality AVERAGE
set weight tsys on
set weight calibration on
set phase antenna atmospher internal relative
set amplitude antenna absolute jansky relative
set rf_passband antenna frequency file on
!
set selection LINE USB 101 and 102
find /proc corr /sou Betelgeuse
table ~/arancha/mitabla.uvt new /resample 40 20 -30 2 V

--:-- mitabla.uvt-table.clic (Text)--L3--All-----
Wrote /users/PdB/observer/arancha/mitabla.uvt-table.clic
```

CLIC Window inte
CONTINUE S

```
observer@bure4
File Edit Sett
[observer@bure4
[observer@bure4
I-SIC_BTLGTR, L
Timer value : 3
I-SIC, X-Window
Procedures in /L
Header
I-SET_NUMBERS, [C
I-SET_NUMBERS, [C
I-MTH_INIT, [0000
I-SIC, Default
I-SET_DATA, [0000
I-CLIC, [0000] T
I-X, X-Window c
I-X, Device DIS
I-X, Screen cha
I-X, Backing St
I-X, Vendor The
I-X, Protocol >
I-X, Screen siz
I-X, Screen pi>
Graphics device
CLIC>
CLIC> ]
```

Simple UV Table creation

GO ABORT HELP

CREATE THE TABLE

Use atm. phase correction? Yes

Input Data File Name ? /project/qd12/31-nov-2006-qd12.hpb File

Output UV Table Name ? ~/arancha/mitabla

New Table? No

Source Name ? Betelgeuse

R.A. & Dec. Offsets (for Mosaics)? 0 0

First and last scan ? 0 1000

Min. Data quality ? AVERAGE Choices

Receiver number ? 1 Choices

Line or Continuum ? LINE Choices

Band Used ? USB Choices

Use L01 ? Yes

Use L02 ? Yes

Use L03 ? No

Use L04 ? No

Use L05 ? No

Use L06 ? No

Change line parameter ? No

Resample spectral data ? No

Line parameters Line Line parameters Help

Resampling parameters Resampling Resampling parameters Help

2nd data set

CLIC Window
CONTINUE

observer@

```

File Edit
[observer@b
[observer@b
I-SIC_GTLGT
Timer value
I-SIC, X-W
Procedures
Header
I-SET_NUMBE
I-SET_NUMBE
I-MTH_INIT,
I-SIC, Defa
I-SET_DATA,
I-CLIC,[000
I-X, X-Win
I-X, Devic
I-X, Scree
I-X, Backi
I-X, Vendo
I-X, Proto
I-X, Scree
I-X, Scree
Graphics de
CLIC>
CLIC> []

```

```
emacs@bure4
File Edit Options Buffers Tools Help
[Icons]
mitabla.uvt-table.clic
file in "/project/qd12/13-sep-2006-qd12.hpb"
!
set default
set scan 0 10000
set offset 0 0
set receiver 1
set quality AVERAGE
set weight tsys on
set weight calibration on
set phase antenna atmospher internal relative
set amplitude antenna absolute jansky relative
set rf_passband antenna frequency file on
!
set selection LINE USB 101 and 102
find /proc corr /sou Betelgeuse
table ~/arancha/mitabla.uvt new /resample 40 20 -30 2 V
!
file in "/project/qd12/13-oct-2006-qd12.hpb"
!
set default
set scan 0 10000
set offset 0 0
set receiver 1
set quality AVERAGE
set weight tsys on
set weight calibration on
set phase antenna atmospher internal relative
set amplitude antenna absolute jansky relative
set rf_passband antenna frequency file on
!
set selection LINE USB 101 and 102
find /proc corr /sou Betelgeuse
table ~/arancha/mitabla.uvt █
!
:-- mitabla.uvt-table.clic (Text)--L38--All-----
Wrote /users/PdB/observer/arancha/mitabla.uvt-table.clic
```

2nd data set

```
emacs@bure4
File Edit Options Buffers Tools Help

mitabla.uvt-table.clic

file in "/project/qd12/13-sep-2006-qd12.hpb"
!
set default
set scan 0 10000
set offset 0 0
set receiver 1
set quality AVERAGE
set weight tsys on
set weight calibration on
set phase antenna atmospher internal relative
set amplitude antenna absolute jansky relative
set rf_passband antenna frequency file on
!
set selection LINE USB 101 and 102
find /proc corr /sou Betelgeuse
table ~/arancha/mitabla.uvt new /freq CO(1-0) 115271.204 /resample 40 20 -30 2 V
!

-- :-- mitabla.uvt-table.clic (Text)--L9--A11-----
```

```
observer@bure4: /project/qa26
File Edit Settings Help
CLIC> help table
CLIC\TABLE Name [OLD|NEW] [/COMPRESS tmax uvmax]
[/RESAMPLE nc ref val inc code shape width] [/FFT]
[/FREQUENCY name rest-freq] [/DROP n1 n2]
[/NOCHECK [SOURCE|POINTING|PHASE|EPOCH]]

This command will create an UV data Table from the current index. is
not given, the most recently created table will be extended. Next argu-
ment may be OLD (default value if not specified) to extend an existing
table, or NEW to create a new table.

The bands and subbands used must have been given by the command SET SE-
LECTION. The weighting mode can be modified by the command SET WEIGHTS.

TABLE /RESAMPLE nc ref val inc code [shape width /FFT]

Option /RESAMPLE enables to resample data on a new spectral grid
(for line data). 'nc' is the output number of channels, 'ref' the
reference channel, 'val' the value of velocity or frequency offset
(with respect to the rest frequency) at the reference channel, 'inc'
the resolution, 'code' is "V" if the value 'val' and the resolution
'inc' are in velocity units, "F" for frequency units.

The reference channel thus corresponds to the given 'val' velocity,
or to the offset 'val' in MHz from the rest frequency present in the
header or modified by option /FREQUENCY.

Resampling is done by default through linear interpolation of input
channel data. Resampling may also be done (using option /FFT) in
Fourier space by cut-off or extrapolation (by zeroes) of the Fourier
components, after deconvolution by the channel response of the cor-
relator (due to on-line apodization), and followed by reconvolution
to produce frequency channels of the given 'shape' and 'width'. Al-
lowed shapes are:
  TBox = a box in delay space (unapodized correlator)
  Ppar = a parabola in delay space (apodized correlator) (the de-
        fault)
  FBox = a box in frequency space (square filter)
  FTri = a triangle in frequency space (Hanning smoothed square fil-
        ter)
The width is the channel width in units of channel separation (de-
fault 1).

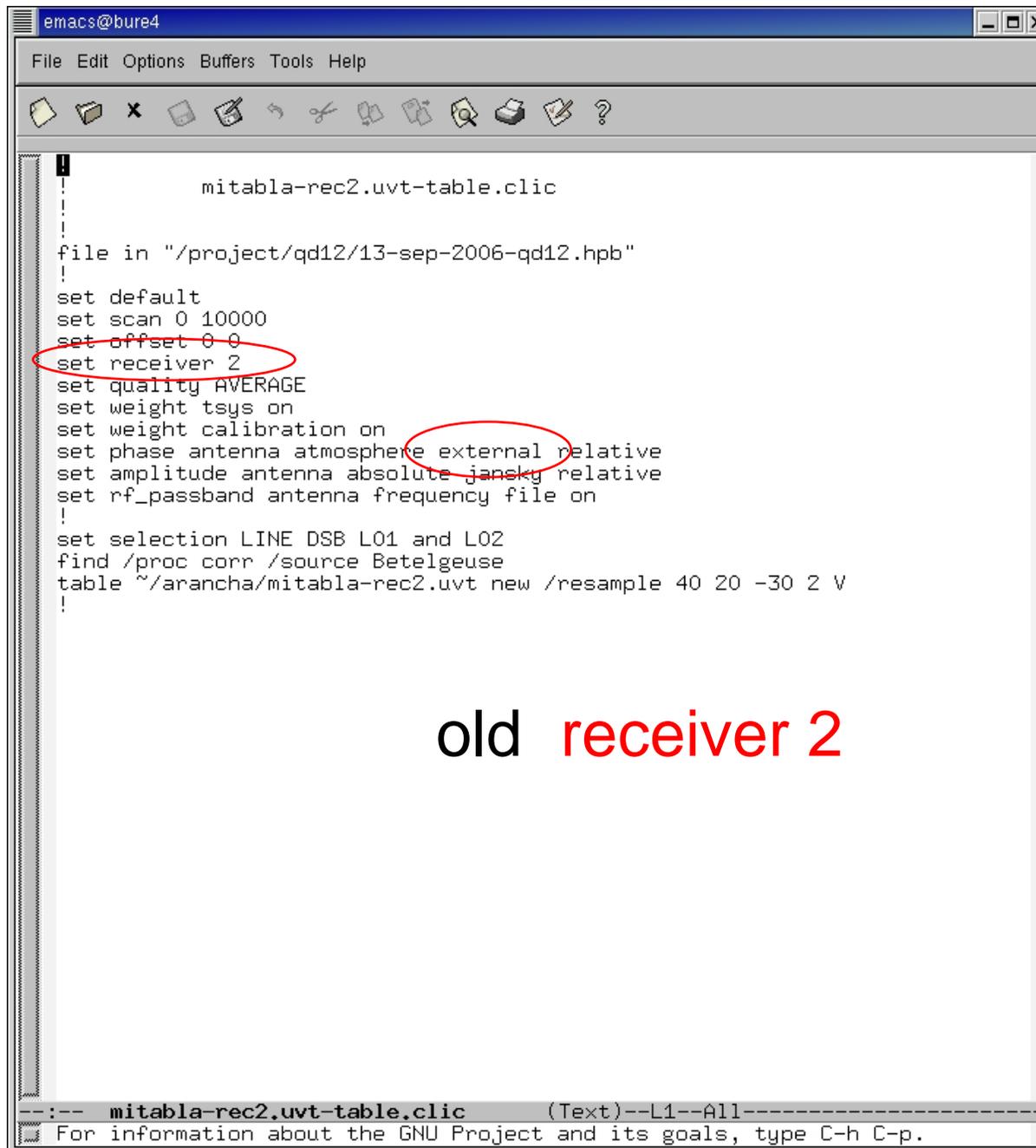
Option /FFT is not recommended when joining together several sub-
bands to produce a single spectrum, with a limited number of broad
channels. In those cases using the FFT could produce a spectrum
with "holes" at the points between subbands with limited overlap.

TABLE /FREQUENCY name rest-freq

Option /FREQUENCY is used to redefine the rest frequency (in MHz)
and line name for the output table. The velocity scale is computed
accordingly. This rest frequency will correspond to the reference
channel in option RESAMPLE.

TABLE /NOCHECK [SOURCE|POINTING|PHASE|EPOCH]

When processing each scan, CLIC checks whether a number of position
```



```
emacs@bure4
File Edit Options Buffers Tools Help

mitabla-rec2.uvt-table.clic

file in "/project/qd12/13-sep-2006-qd12.hpb"
!
set default
set scan 0 10000
set offset 0 0
set receiver 2
set quality AVERAGE
set weight tsys on
set weight calibration on
set phase antenna atmosphere external relative
set amplitude antenna absolute jansky relative
set rf_passband antenna frequency file on
!
set selection LINE DSB L01 and L02
find /proc corr /source Betelgeuse
table ~/arancha/mitabla-rec2.uvt new /resample 40 20 -30 2 V
!
```

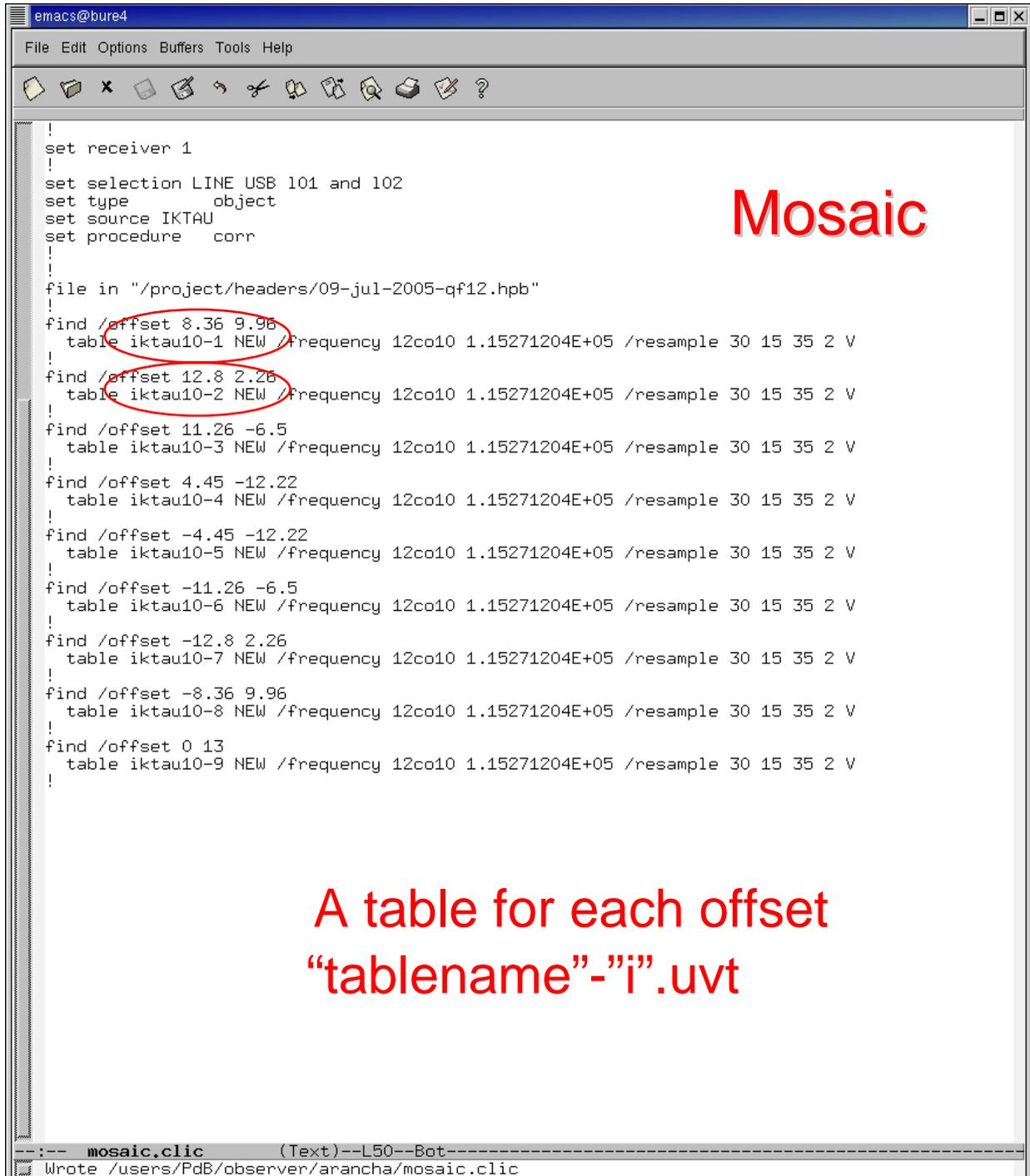
old receiver 2

--:-- mitabla-rec2.uvt-table.clic (Text)--L1--All-----
For information about the GNU Project and its goals, type C-h C-p.

```
emacs@bure4
File Edit Options Buffers Tools Help
mitabla.uvt-table.clic
file in "/project/qd12/13-sep-2006-qd12.hpb"
set default
set scan 0 10000
set offset 0 0
set receiver 1
set quality AVERAGE
set weight tsys on
set weight calibration on
set phase antenna atmospher internal relative
set amplitude antenna absolute jansky relative
set rf_passband antenna frequency file on
!
set selection CONT DSE C01 and C03 and C04 /window 115271-280 115271-20 115271+20 115271+280 112055 112594
find /proc corr /sou Betelgeuse
table ~/arancha/mitabla.uvt new
!
```

continuum

```
--:-- mitabla.uvt-table.clic (Text)--L18--All-----
Wrote /users/PdB/observer/arancha/mitabla.uvt-table.clic
```



Mosaic

```
!
set receiver 1
!
set selection LINE USB 101 and 102
set type      object
set source IKTAU
set procedure corr
!
!
file in "/project/headers/09-jul-2005-qf12.hpb"
!
find /offset 8.36 9.96
  table iktau10-1 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
!
find /offset 12.8 2.26
  table iktau10-2 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
!
find /offset 11.26 -6.5
  table iktau10-3 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
!
find /offset 4.45 -12.22
  table iktau10-4 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
!
find /offset -4.45 -12.22
  table iktau10-5 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
!
find /offset -11.26 -6.5
  table iktau10-6 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
!
find /offset -12.8 2.26
  table iktau10-7 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
!
find /offset -8.36 9.96
  table iktau10-8 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
!
find /offset 0 13
  table iktau10-9 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
!
```

A table for each offset
"tablename"-*i*".uvt

```
emacs@bure4
File Edit Options Buffers Tools Help
file in "/project/headers/09-jul-2005-qf12.hpb"
find /offset 8.36 9.96
  table iktau10-1 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
|
find /offset 12.8 2.26
  table iktau10-2 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
|
find /offset 11.26 -6.5
  table iktau10-3 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
|
find /offset 4.45 -12.22
  table iktau10-4 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
|
find /offset -4.45 -12.22
  table iktau10-5 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
|
find /offset -11.26 -6.5
  table iktau10-6 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
|
find /offset -12.8 2.26
  table iktau10-7 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
|
find /offset -8.36 9.96
  table iktau10-8 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
|
find /offset 0 13
  table iktau10-9 NEW /frequency 12co10 1.15271204E+05 /resample 30 15 35 2 V
|-----|
file in "/project/headers/25-dec-2005-qf12.hpb"
find /offset 8.36 9.96
  table iktau10-1 OLD
|
find /offset 12.8 2.26
  table iktau10-2 OLD
|
find /offset 11.26 -6.5
  table iktau10-3 OLD
|
find /offset 4.45 -12.22
  table iktau10-4 OLD
|
find /offset -4.45 -12.22
  table iktau10-5 OLD
|
find /offset -11.26 -6.5
  table iktau10-6 OLD
|
find /offset -12.8 2.26
  table iktau10-7 OLD
|
find /offset -8.36 9.96
  table iktau10-8 OLD
|-----|
--:-- mosaic.clic (Text)--L30--25%--
```

Mosaic

2nd data set

Created “mytable”.uvt, in **CLIC**



Analyze the data, in **MAPPING**

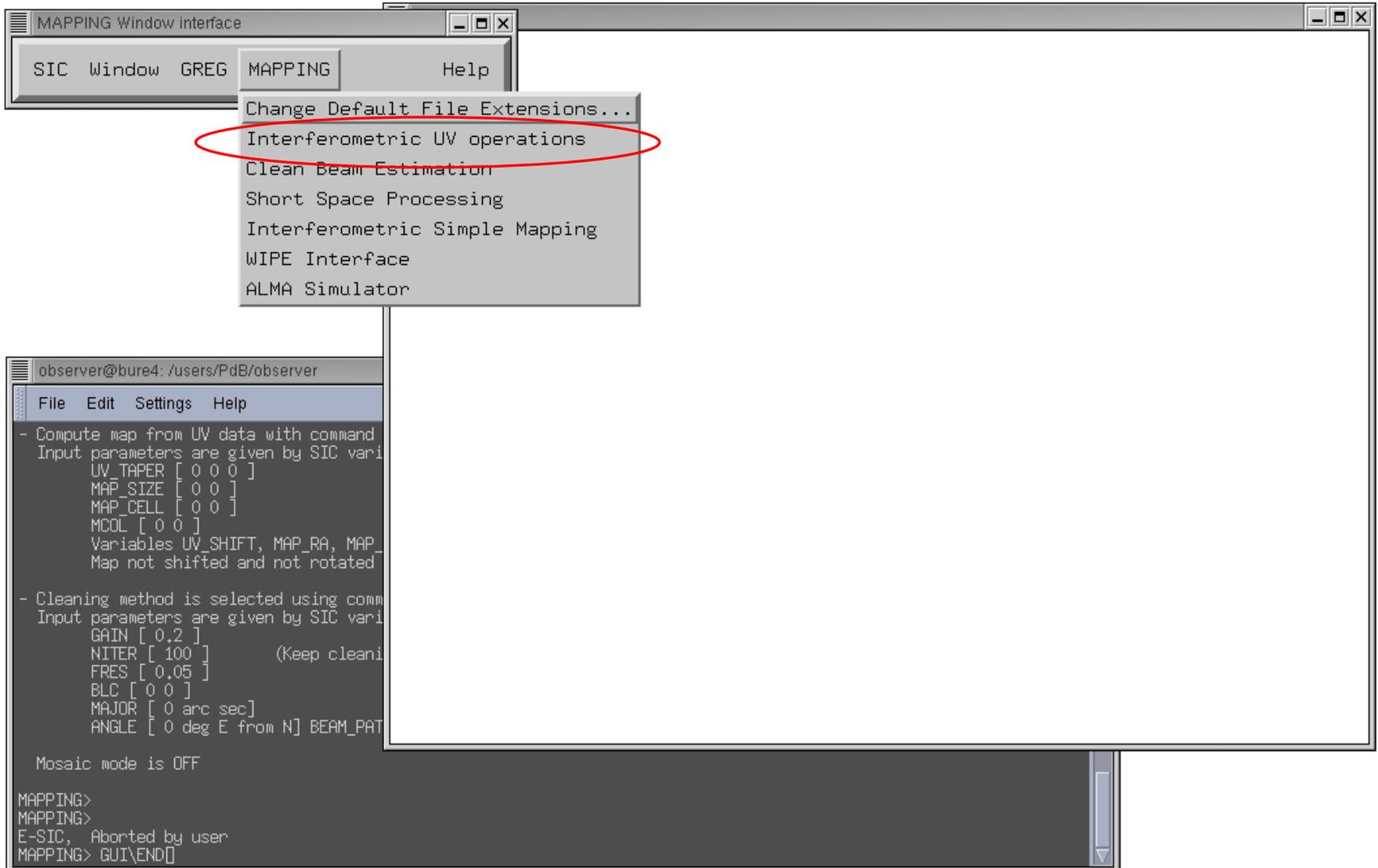
Data analysis in the *uv*-plane; **MAPPING**

The image displays the MAPPING software interface. At the top left is a menu bar for the 'MAPPING Window interface' with options: SIC, Window, GREG, MAPPING (highlighted with a red circle), and Help. Below this is a terminal window titled 'observer@bure4: /users/PdB/observer' with a menu bar (File, Edit, Settings, Help). The terminal contains the following text:

```
- The input file(s) must be read using command READ  
  
- Compute map from UV data with command UV_MAP  
Input parameters are given by SIC variables:  
  UV_TAPER [ 0 0 0 ]           WEIGHT_MODE [ NATURAL ]  
  MAP_SIZE [ 0 0 ]           UV_CELL [ 7.5 1 ]  
  MAP_CELL [ 0 0 ]           WCOL [ 0 ]  
  MCOL [ 0 0 ]             CONVOLUTION [ 5 ]  
  Variables UV_SHIFT, MAP_RA, MAP_DEC, MAP_ANGLE are used for centering  
  Map not shifted and not rotated  
  
- Cleaning method is selected using command HOGBOM, CLARK, SDI or MRC  
Input parameters are given by SIC variables:  
  GAIN [ 0.2 ]  
  NITER [ 100 ]           (Keep cleaning after convergence)  
  FRES [ 0.05 ]           ARES [ 0 ]  
  BLC [ 0 0 ]           TRC [ 0 0 ]  
  MAJOR [ 0 arc sec]     MINOR [ 0 arc sec]  
  ANGLE [ 0 deg E from N] BEAM_PATCH [ 0 0 ]  
  
Mosaic mode is OFF  
MAPPING> []
```

To the right of the terminal is a large, empty window titled '<GREG'.

Data analysis in the *uv*-plane



The image shows a screenshot of the MAPPING software interface. The main window is titled "MAPPING Window interface" and has a menu bar with "SIC", "Window", "GREG", "MAPPING", and "Help". The "MAPPING" menu is open, showing the following options:

- Change Default File Extensions...
- Interferometric UV operations
- Clean Beam Estimation
- Short Space Processing
- Interferometric Simple Mapping
- WIPE Interface
- ALMA Simulator

The option "Interferometric UV operations" is circled in red. Below the main window, there is a terminal window titled "observer@bure4: /users/PdB/observer" with a menu bar "File Edit Settings Help". The terminal displays the following text:

```
- Compute map from UV data with command
Input parameters are given by SIC vari
UV_TAPER [ 0 0 0 ]
MAP_SIZE [ 0 0 ]
MAP_CELL [ 0 0 ]
MCDL [ 0 0 ]
Variables UV_SHIFT, MAP_RA, MAP_
Map not shifted and not rotated

- Cleaning method is selected using comm
Input parameters are given by SIC vari
GAIN [ 0.2 ]
NITER [ 100 ] (Keep clean)
FRES [ 0.05 ]
BLC [ 0 0 ]
MAJOR [ 0 arc sec]
ANGLE [ 0 deg E from N] BEAM_PAT

Mosaic mode is OFF

MAPPING>
MAPPING>
E-SIC, Aborted by user
MAPPING> GUI\END[]
```

Inspection of the data in the *uv*-plane

The screenshot displays the MAPPING software interface. At the top, a menu bar includes 'SIC', 'Window', 'GREG', 'MAPPING', and 'Help'. Below this is the 'UV actions control panel' window, which contains several buttons: 'GO', 'ABORT', and 'HELP'. The 'Generic name' field is set to 'mitabla'. The panel lists various UV actions, each with a corresponding button and a 'Help' button:

Action	Button	Parameters Button	Help Button
UV Clip	UV_CLIP	UV_CLIP parameters	Help
UV Plots	UVALL	UVALL parameters	Help
UV_SHIFT	UV_SHIFT	UV_SHIFT parameters	Help
UV fit(SLATEC)	UV_FIT-S	UV_FIT parameters	Help
Plotting UV fits	PLOTFIT	PLOTFIT parameters	Help

The 'UVALL' button is circled in red. Below the control panel is a terminal window showing the following output:

```
MAP_SIZE [ 0 0 ]
MAP_CELL [ 0 0 ]
MCDL [ 0 0 ]
Variables UV_SHIFT, MAP_RA, MAP_
Map not shifted and not rotated

- Cleaning method is selected using comm
Input parameters are given by SIC vari
GAIN [ 0.2 ]
NITER [ 100 ] (Keep clean
FRES [ 0.05 ]
BLC [ 0 0 ]
MAJOR [ 0 arc sec]
ANGLE [ 0 deg E from N] BEAM_PATCH [ 0 0 ]

Mosaic mode is OFF

MAPPING>
MAPPING> []
```

Inspection of the data in the *uv*-plane

MAPPING Window interface

SIC Window GREG MAPPING

UV actions control panel

GO ABORT

Generic name mitabla

UV Clip UV_CLIP

UV Plots UVALL

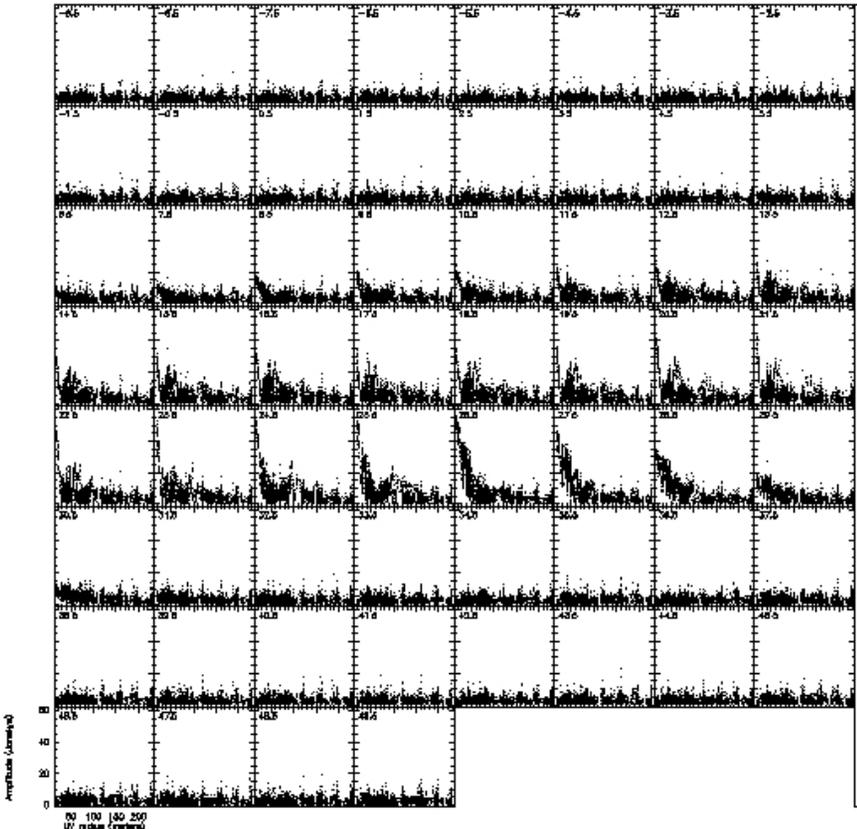
UV_SHIFT UV_SHIFT

UV fit(SLATEC) UV_FIT-S

Plotting UV fits PLOTFIT

```
I-BEGIN, Defining find_size_margin
on /users/PdB/observer/gag.log
I-BEGIN, Defining find_window_position
on /users/PdB/observer/gag.log
I-BEGIN, Defining window_xy
on /users/PdB/observer/gag.log
I-BEGIN, Defining plot_position
on /users/PdB/observer/gag.log
I-BEGIN, Defining header_position
on /users/PdB/observer/gag.log
I-BEGIN, Defining window_init
on /users/PdB/observer/gag.log
mitabla.uvt (1158691335) is older than
Changing to new or updated file mitabla.tuv
S-CHAR, Fonts loaded
... Finding limits ...
NX_BOX = 8 ! Integer GLOBAL
NY_BOX = 8 ! Integer GLOBAL
MAPPING> 
```

<GREG 0



mitabla.tuv

Source: I2128

Line: co21

Frequency: 230.53799 GHz

All Channels

AMP vs. RADIUS

Box marking: VELOCITY

observer

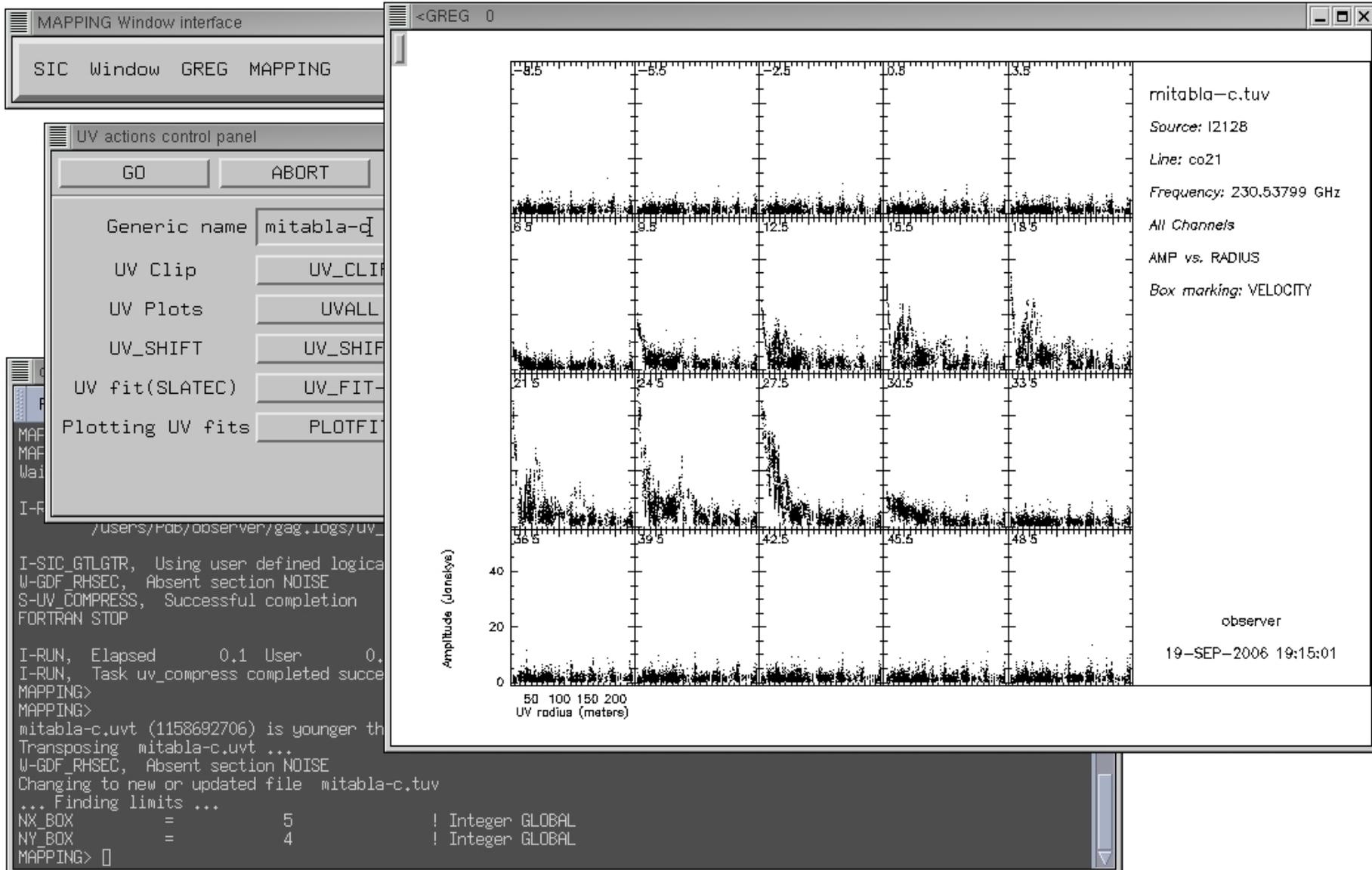
19-SEP-2006 19:10:37

Inspection of the data in the *uv*-plane

The image displays a software interface for inspecting data in the *uv*-plane. It consists of several overlapping windows:

- MAPPING Window interface**: A menu bar with options: SIC Window GREG MAPPING.
- <GREG 0**: A window with a blank plot area.
- uv_compress**: A dialog box with the following fields and buttons:
 - Buttons: GO, ABORT, HELP
 - Input UV table: mitabla.uvt
 - Output UV table: mitabla-c.uvt
 - Number of channels to average: 4
- Terminal**: A window showing a series of "MAPPING>" prompts. The last prompt is "MAPPING> run uv_compress" (circled in red), followed by "Waiting ...".
- Plot Window**: A window showing a spectrum plot with the following metadata:
 - mitabla.tuv
 - Source: I2128
 - Line: co21
 - Frequency: 230.53799 GHz
 - All Channels
 - AMP vs. RADIUS
 - Box marking: VELOCITY
 - observer
 - 19-SEP-2006 19:12:28

Inspection of the data in the *uv*-plane



Inspection of the data in the *uv*-plane

The screenshot displays the MAPPING software interface. At the top left, a window titled "MAPPING Window interface" contains the text "SIC Window GREG MAPPING". The main window, titled "<GREG 0", shows a plot of "AMP vs. RADIUS" with "Box marking: VELOCITY". The plot has a y-axis labeled "Amplitude (Janskys)" ranging from 0 to 40 and an x-axis labeled "UV radius (meters)" ranging from 50 to 200. A control panel titled "UV actions control panel" is overlaid on the plot, featuring buttons for "GO", "ABORT", and "HELP". Below these buttons is a table of actions:

Action	Parameter	Parameters	Help
Generic name	mitabla-d		
UV Clip	UV_CLIP	UV_CLIP parameters	Help
UV Plots	UVALL	UVALL parameters	Help
UV_SHIFT	UV_SHIFT	UV_SHIFT parameters	Help
UV fit(SLATEC)	UV_FIT-S	UV_FIT parameters	Help
Plotting UV fits	PLOTFIT	PLOTFIT parameters	Help

The "UVALL parameters" button is circled in red. To the right of the plot, a text box displays the following information:

mitabla-c.tuv
Source: I2128
Line: co21
Frequency: 230.53799 GHz
All Channels
AMP vs. RADIUS
Box marking: VELOCITY

observer
19-SEP-2006 19:15:01

At the bottom left, a terminal window shows the following log output:

```
/users/Pab/observer/gag_logs/uv_
I-SIC_GTLGTR, Using user defined logical
W-GDF_RHSEC, Absent section NOISE
S-UV_COMPRESS, Successful completion
FORTRAN STOP

I-RUN, Elapsed 0.1 User 0.
I-RUN, Task uv_compress completed succe
MAPPING>
MAPPING>
mitabla-c.uvt (1158692706) is younger th
Transposing mitabla-c.uvt ...
W-GDF_RHSEC, Absent section NOISE
Changing to new or updated file mitabla-c.tuv
... Finding limits ...
NX_BOX = 5 ! Integer GLOBAL
NY_BOX = 4 ! Integer GLOBAL
MAPPING> []
```

Inspection of the data in the *uv*-plane

The screenshot displays a software interface for inspecting data in the *uv*-plane. The main window, titled '<GREG 0', shows a plot of data points in the *uv*-plane. The plot has a horizontal axis ranging from -8.5 to 13.5 and a vertical axis ranging from -48.5 to 18.5. The data points are clustered around the origin, with some points extending to the edges of the plot. The plot is titled 'mitabla-c.tuv' and includes the following information: Source: I2128, Line: co21, Frequency: 230.53799 GHz, All Channels, AMP vs. RADIUS, and Box marking: VELOCITY. The observer is identified as 'observer' and the date/time is '19-SEP-2006 19:15:01'.

The 'UV actions control panel' is overlaid on the main window. It contains buttons for 'GO', 'ABORT', and 'HELP'. Below these buttons are three rows of controls for different UV parameters:

Parameter	Control	Parameters	Help
Generic name	mitabla-c		
UV Clip	UV_CLIP	UV_CLIP parameters	Help
UV Plots	UVALL	UVALL parameters	Help
UV_SHIFT	UV_SHIFT	UV_SHIFT parameters	Help

The 'UVALL parameters' dialog box is also overlaid on the main window. It contains the following fields and controls:

Field	Value	Control
X data	RADIUS	Choices
Y data	AMP	Choices
First channel	0	
Last channel	0	
Plot limits		
Plot model fit	<input type="checkbox"/> No	

The 'MAPPING Window interface' is visible at the top left, showing 'SIC Window GREG MAPPING'. The bottom of the screenshot shows a terminal window with the following output:

```
mitabla-c.tuv (11000270) is generated  
Transposing mitabla-c.uvt ...  
U-GDF_RHSEC, Absent section NOISE  
Changing to new or updated file mitabla-c.tuv  
... Finding limits ...  
NX_BOX = 5 ! Integer GLOBAL  
NY_BOX = 4 ! Integer GLOBAL  
MAPPING> []
```

Inspection of the data in the *uv*-plane

The screenshot displays the MAPPING software interface. At the top, a window titled "MAPPING Window interface" contains the text "SIC Window GREG MAPPING". Below it, the "UV actions control panel" is visible, featuring buttons for "GO", "ABORT", and "HELP". The panel includes a "Generic name" field with the value "mitabla-d" and three rows of controls for "UV Clip", "UV Plots", and "UV_SHIFT", each with a button and a "parameters" button.

In the foreground, the "UVALL parameters" dialog box is open. It contains the following fields and options:

- X data: RADIUS
- Y data: AMP
- First channel: 0
- Last channel: 0
- Plot limits: [empty]
- Plot model fit: No

A "Choices" menu is open over the "Y data" field, listing the following options: U, V, angle, RADIUS, TIME, DATE, SCAN, NUMBER, AMP, PHASE, REAL, and WEIGHT.

The background shows a plot window titled "<GREG 0" displaying a plot of data in the uv-plane. The plot has a horizontal axis with labels 0.5, 1.5, 2.5, 3.5, 4.5, and 5.5, and a vertical axis with labels 18.5, 33.5, and 48.5. The plot shows a noisy signal with a prominent peak at approximately (3.5, 33.5). To the right of the plot, a text box provides the following information:

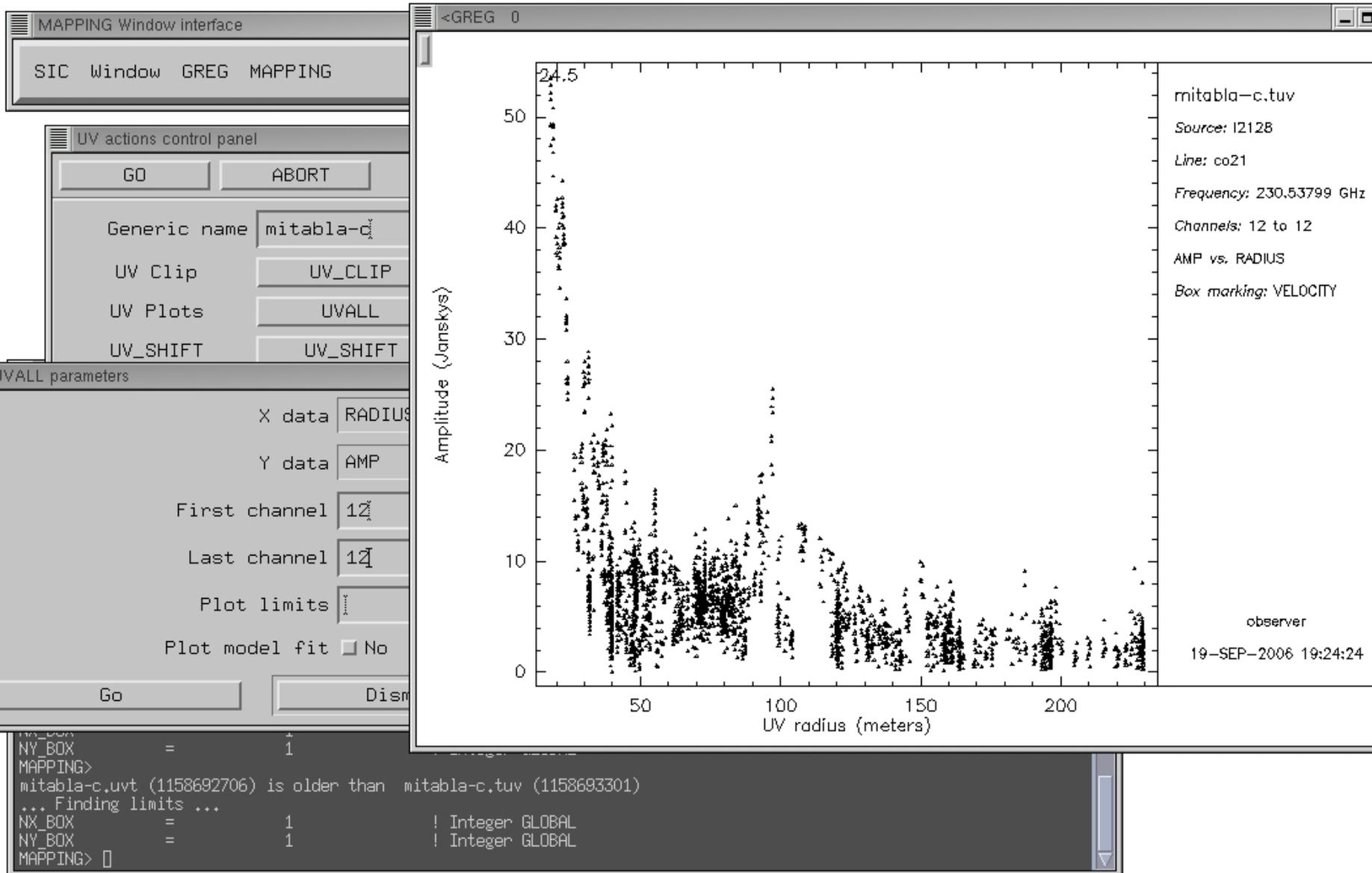
mitabla-c.tuv
Source: 12128
Line: co21
Frequency: 230.53799 GHz
All Channels
AMP vs. RADIUS
Box marking: VELOCITY

observer
19-SEP-2006 19:15:01

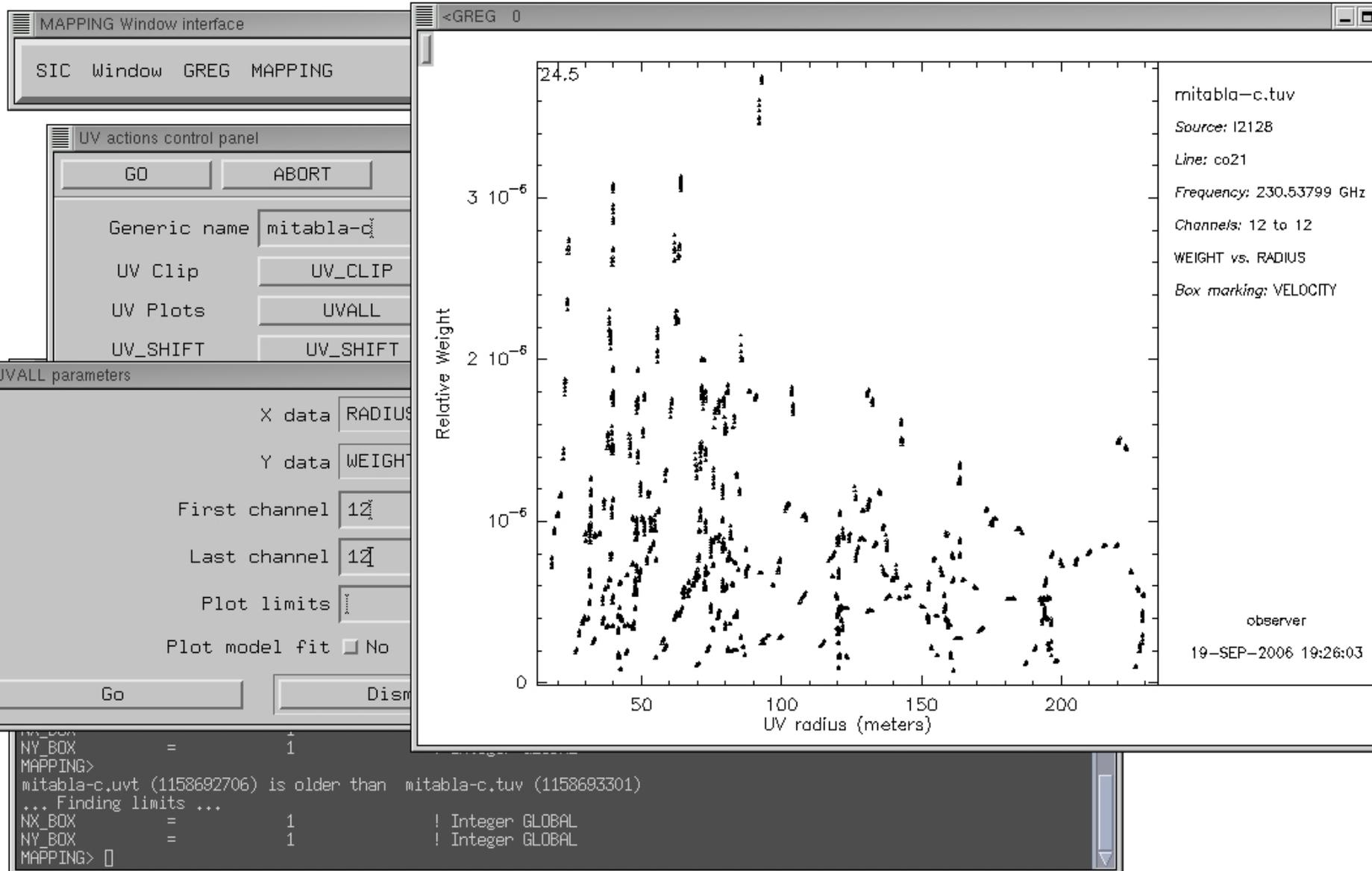
At the bottom of the interface, a terminal window shows the following output:

```
mitabla-c.tuv (12000270) is longer than  
Transposing mitabla-c.uvt ...  
W-GDF_RHSEC, Absent section NOISE  
Changing to new or updated file mitabla-c.tuv  
... Finding limits ...  
NX_BOX = 5 ! Integer GLOBAL  
NY_BOX = 4 ! Integer GLOBAL  
MAPPING> [ ]
```

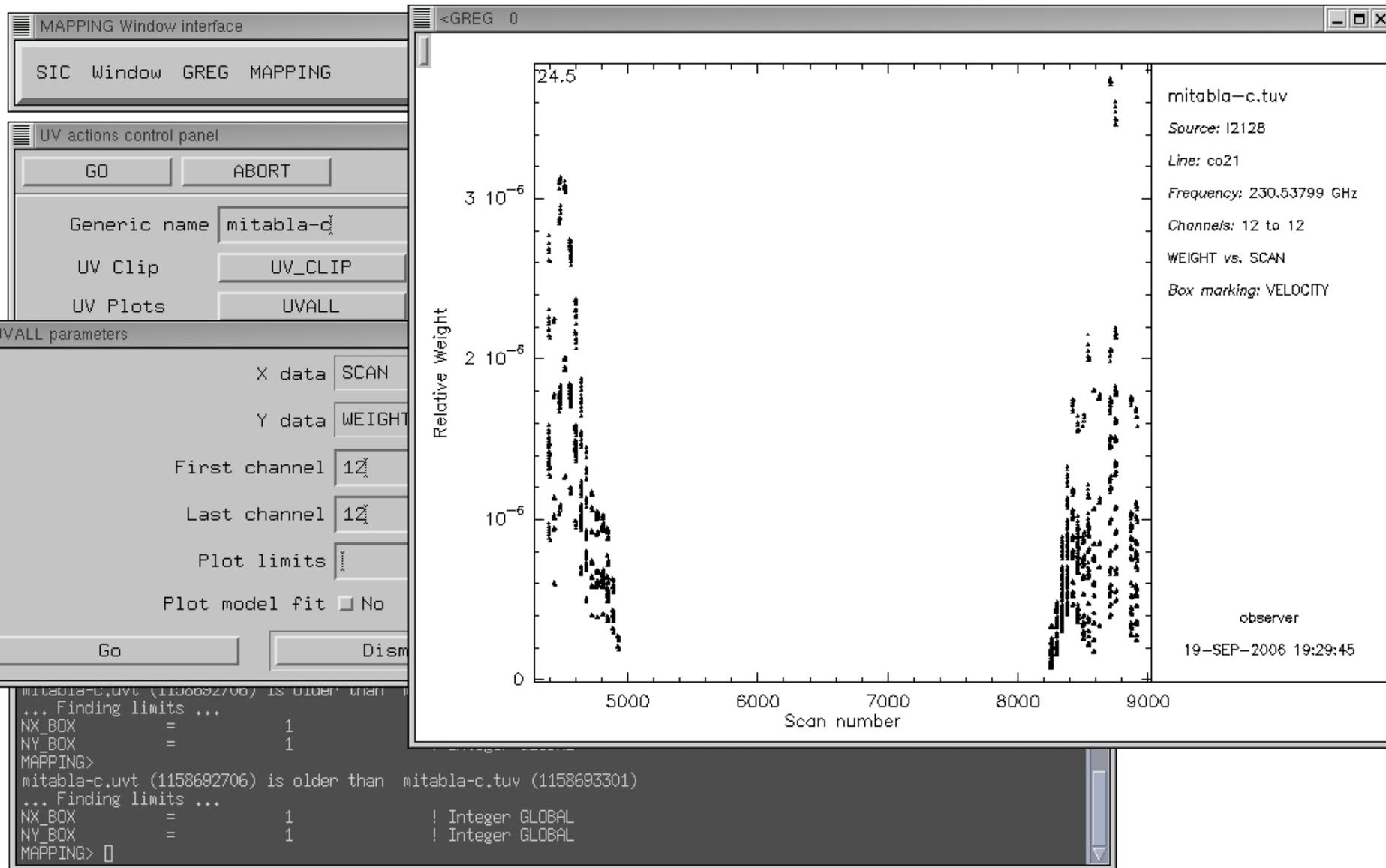
Inspection of the data in the *uv*-plane



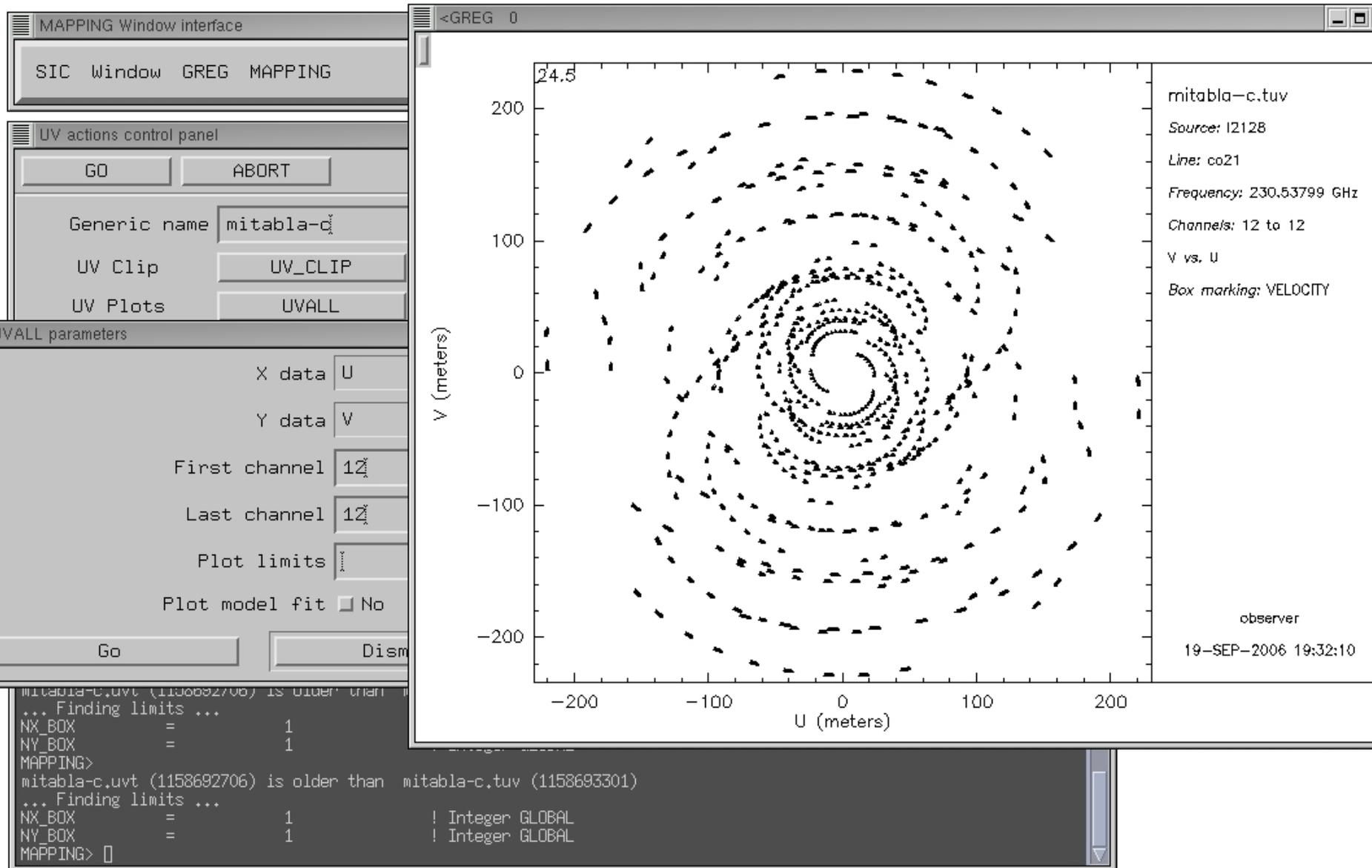
Inspection of the data in the *uv*-plane



Inspection of the data in the *uv*-plane



Inspection of the data in the *uv*-plane



Inspection of the data in the *uv*-plane

The screenshot shows the MAPPING software interface. At the top, there is a window titled 'MAPPING Window interface' with buttons for 'SIC', 'Window', 'GREG', and 'MAPPING'. Below this is the 'UV actions control panel' which contains several buttons: 'GO', 'ABORT', 'Generic name' (with 'mitabla-c' entered), 'UV Clip' (with 'UV_CLI' selected), 'UV Plots' (with 'UVAL' selected and circled in red), 'UV_SHIFT' (with 'UV_SHI' selected), 'UV fit(SLATEC)' (with 'UV_FIT' selected), and 'Plotting UV fits' (with 'PLOTFI' selected). At the bottom, a terminal window shows the following text:

```
I-SIC_GTLGTR, Using user defined logic
U-GDF_RHSEC, Absent section NOISE
S-UV_COMPRESS, Successful completion
FORTRAN STOP

I-RUN, Elapsed 0.1 User 0
I-RUN, Task uv_compress completed succ
MAPPING>
MAPPING>
mitabla-c.uvt (1158692706) is younger th
Transposing mitabla-c.uvt ...
U-GDF_RHSEC, Absent section NOISE
Changing to new or updated file mitabla-c.tuv
... Finding limits ...
NX_BOX = 5 ! Integer GLOBAL
NY_BOX = 4 ! Integer GLOBAL
MAPPING> []
```

With commands:

MAPPING> let first 12

MAPPING> let last 12

MAPPING> let ytype weight

MAPPING> let xtype radius

MAPPING> let error_bars yes

MAPPING> go uvall

MAPPING> input uvall

Mapping takes shorter
if previously
we have had a look at the data in
the uv -plane

(1) Passing directly from hpb → mapping

It may happen...

The screenshot displays the MAPPING software interface, which is divided into three main sections:

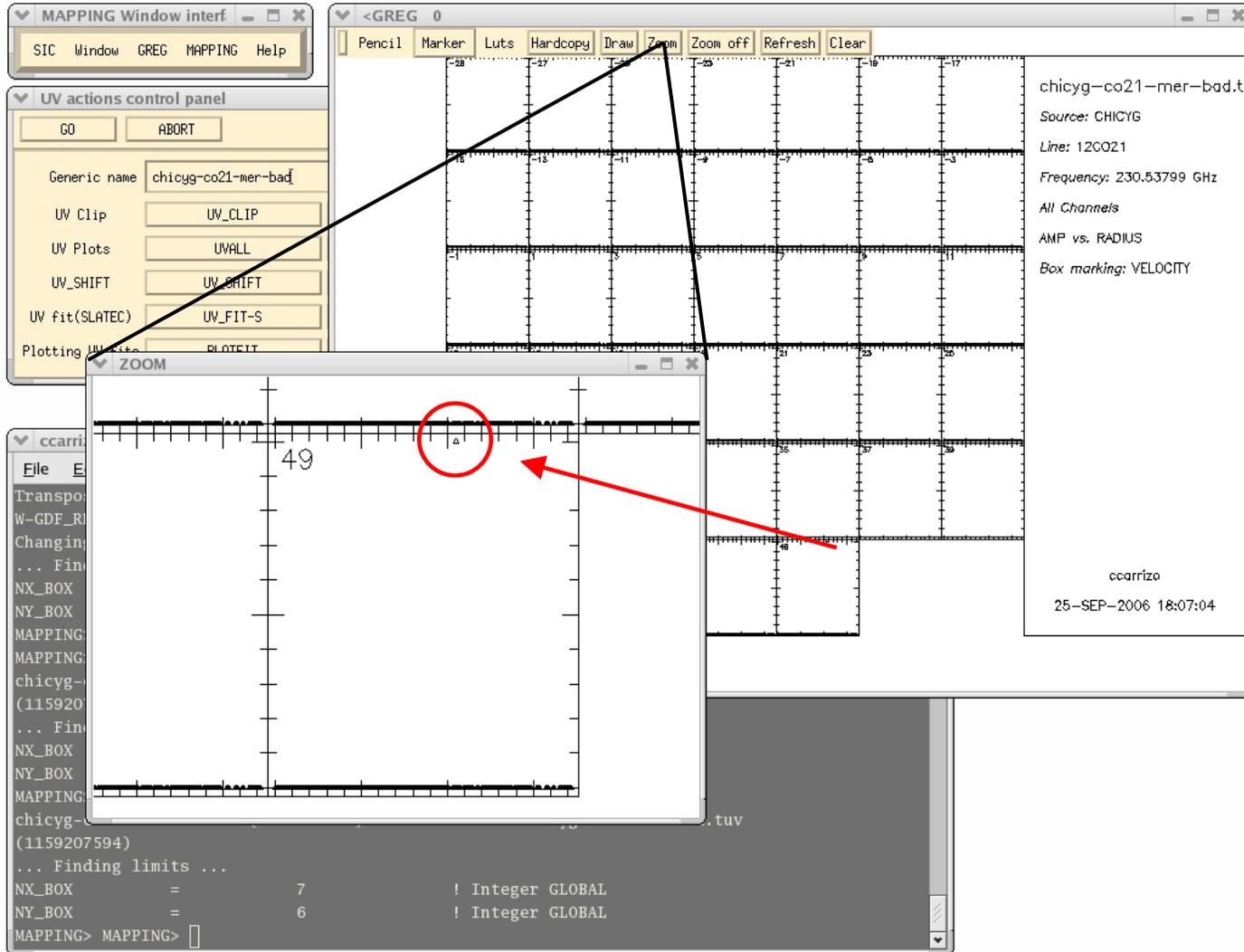
- Mapping Control Panel:** This panel contains various controls for the mapping process. It includes buttons for "GO", "ABORT", and "READ". Below these are input fields for "Generic name" (chicyg-co21-mer-bad), "Image type to show" (DIRTY), "First channel" (0), and "Last channel" (0). There are also dropdown menus for "Mosaic from UV data" (MOSAIC), "Mapping from UV data" (UV_MAP), "Get support" (SUPPORT), "HOGBOM method" (Hogbom), "CLARK method" (Clark), "SDI method" (Sdi), "MRC method" (Mrc), and "Multiscale method" (Multi). A "Show image" button is set to "SHOW".
- Map Window (<GREG 0):** This window displays a 7x7 grid of map tiles. The tiles are mostly green, indicating successful mapping, but the bottom-right tile is black, indicating a failure. The grid is overlaid with a coordinate system showing longitude (16°30'30" to 17°00'00") and latitude (32°54'00" to 32°58'00").
- Terminal Window:** This window shows the command-line output of the mapping process. It includes the following text:

```
I-UVMAP, Creating map file
I-UVMAP, Finished planes 1 to 40 CPU 0.00
I-UVMAP, Finished maps 0.00
S-UVMAP, Successful completion
MAPPING>
I-LEVELS, Contour levels are :
-1400. -1200. -1000. -800.0 -600.0
-400.0 -200.0 200.0 400.0 600.0
800.0 1000. 1200. 1400. 1600.
1800. 2000.
MAPPING>
```

Additional information on the right side of the map window includes the source name "chicyg-co21-mer-bad.l", the line "12CO21", the frequency "230.53799 GHz", the beam size "(no clean beam)", the level step "200 Jy/beam", the box marking "VELOCITY", and the channels "[0,0]". The bottom right corner of the map window shows the user "ccarrizo" and the date/time "25-SEP-2006 17:55:30".

(1) Passing directly from hpb → mapping

It may happen...



(1) Passing directly from hpb → mapping

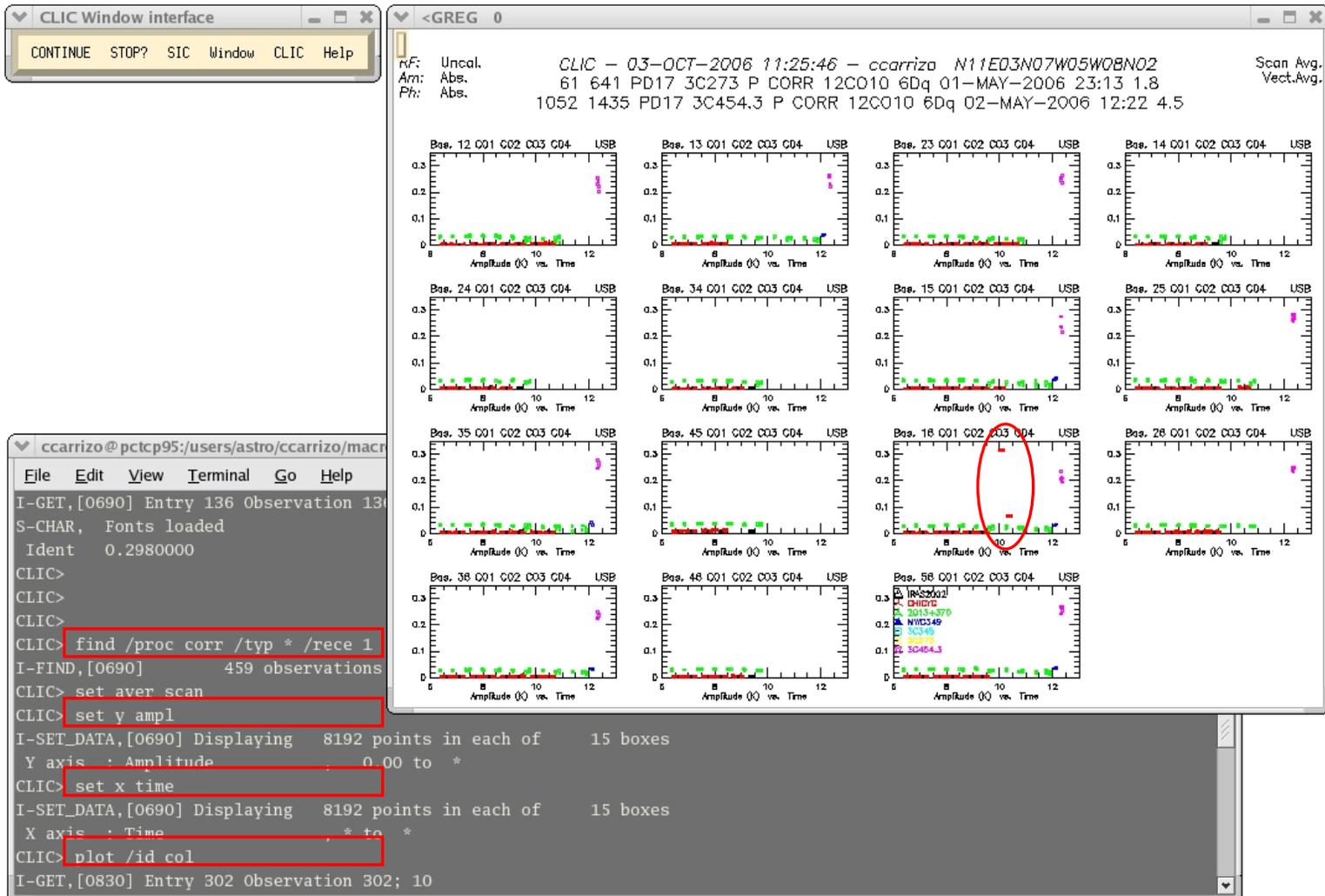
It may happen... that it remains a wrong visibility

```
MAPPING> uv_flag
```

Return to CLIC to identify the wrong visibility(ies) and flag them in the hpb file

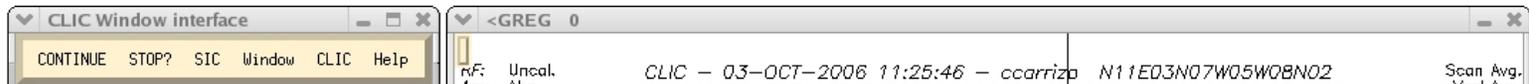
(1) Passing directly from hpb → mapping

It may happen... that you must go back



(1) Passing directly from hpb → mapping

It may happen... that you must go back



```
CLIC> find /proc corr /sou Betel /rece 2 /scans 1245 1255  
CLIC> store quality 9
```

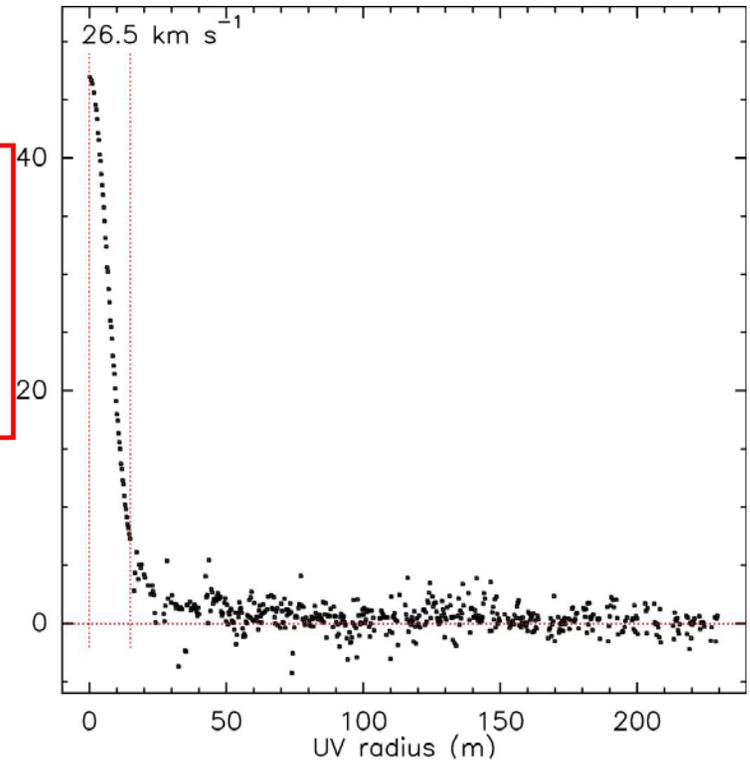
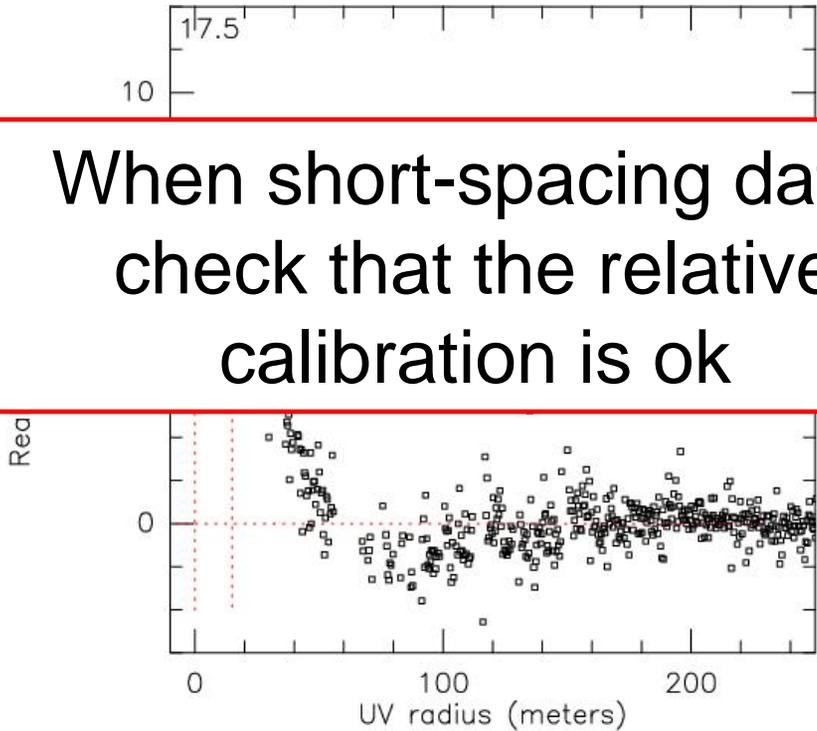
Scans identified and removed from the hpb !!

(if doubts, ask your Local Contact)

A screenshot of a terminal window showing the output of the CLIC commands. The text includes: 'I-GET,[0694] Entry 140 Observation 140; 11', 'I-GET,[0693] Entry 139 Observation 139; 11', 'I-GET,[0692] Entry 138 Observation 138; 11', 'I-GET,[0691] Entry 137 Observation 137; 11', 'I-GET,[0690] Entry 136 Observation 136; 11', and 'Ident 0.2980000'. The prompt 'CLIC>' is followed by a red box containing the word 'cursor'.

(2) Passing directly from hpb → mapping

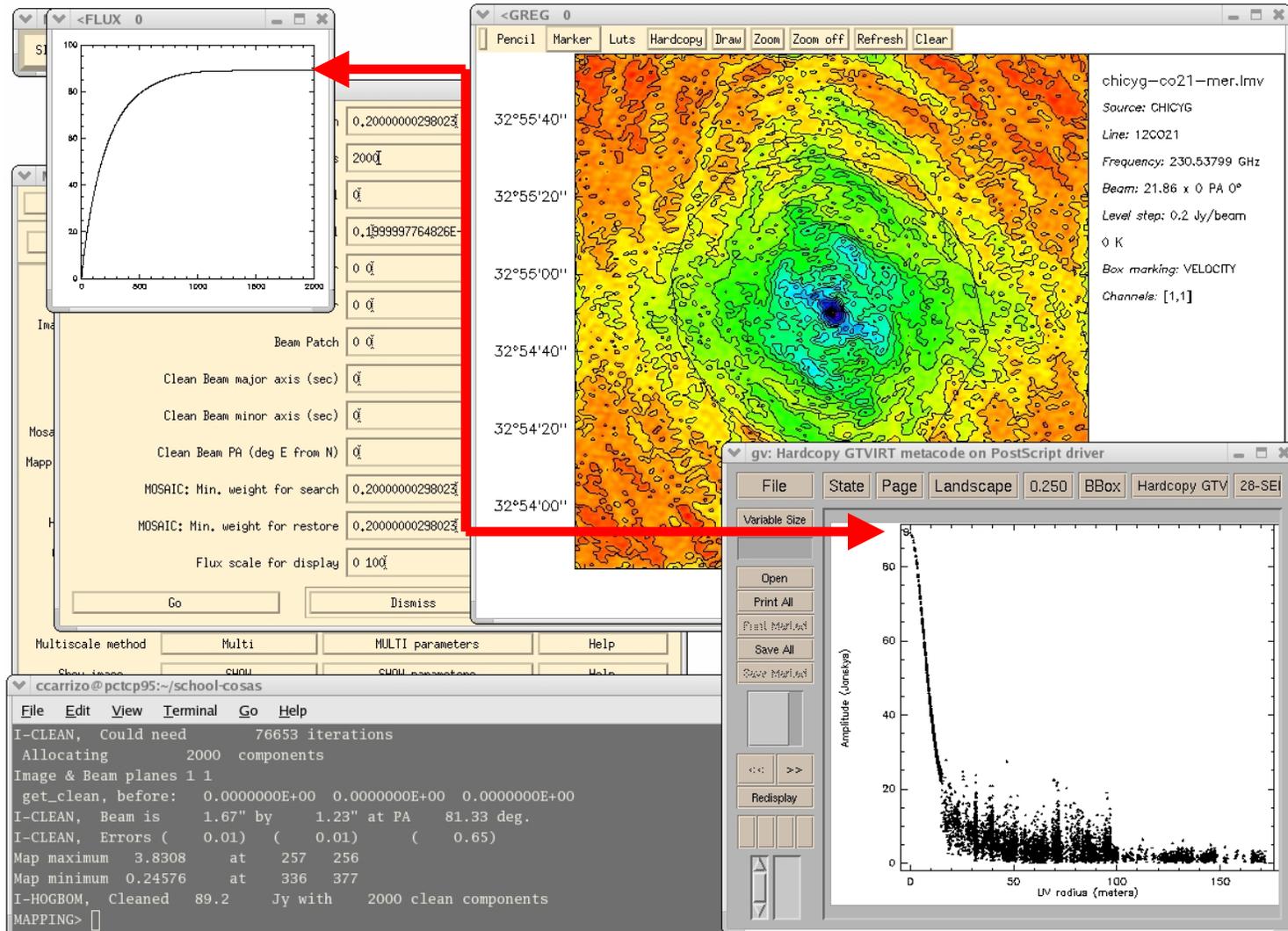
When short-spacing data,
check that the relative
calibration is ok



+ Short-spacing data

(3) Passing directly from hpb → mapping

Good practice: When cleaning (extended sources)...



(3) Passing directly from hpb → mapping

When cleaning (specially extended sources or with supports)
**verify that the flux in the image plane coincides with that at
the zero-spacing**

The screenshot displays a radio astronomy software interface. On the left is the 'Mapping Control Panel' with various settings for cleaning and mapping. In the center is a radio image of a source, with a black diagonal banner overlaid that reads 'well cleaned'. On the right is a metadata panel for source 'CHICYG'. At the bottom left is a terminal window showing the output of the cleaning process. At the bottom right is a plot window showing 'Amplitude (Janskys)' versus 'UV radius (meters)'. The plot shows a sharp peak at zero spacing, indicating that the flux in the image plane coincides with that at the zero-spacing.

Mapping Control Panel

GO ABORT

READ SHOW

Generic name: chicyg-co21-mer

Image type to show: CLEAN

First channel: 0

Last channel: 0

Mosaic from UV data: MOSAIC Mosaic parameters

Mapping from UV data: UV_MAP UV_MAP parameters

Get support: SUPPORT parameters

HOGBOM method: Hogbom HOGBOM parameters

CLARK method: Clark CLARK parameters

SDI method: Sdi SDI parameters

MRC method: Mrc MRC parameters

Multiscale method: Multi MULTI parameters Help

Source: CHICYG
Line: 12CO21
Frequency: 230.53799 GHz
Beam: 1.67 x 1.23 PA 81°
Level step: 0.2 Jy/beam
2.24 K
Box marking: VELOCITY
Channels: [0,0]

Terminal

```
ccarrizo@pctcp95:~/school-cosas
File Edit View Terminal Go Help
Map maximum 3.8308 at 257 256
Map minimum 0.24576 at 336 377
I-HOGBOM, Cleaned 89.2 Jy with 2000 clean components
MAPPING>
I-LEVELS, Contour levels are :
-0.2000 0.2000 0.4000 0.6000 0.8000
1.000 1.200 1.400 1.600 1.800
2.000 2.200 2.400 2.600 2.800
3.000
MAPPING>
```

Plot: Amplitude (Janskys) vs. UV radius (meters)

The plot shows a sharp peak at zero spacing, indicating that the flux in the image plane coincides with that at the zero-spacing.

(3) Passing directly from hpb → mapping

If not, it may happen...

The image shows a screenshot of an astronomical software interface with three main components:

- FLUX 0 Plot:** A graph showing flux versus channel number. The x-axis ranges from 0 to 300, and the y-axis ranges from 0 to 100. The curve starts at (0,0) and rises to approximately (300, 60).
- Map Window (<GREG 0):** A spectral line map showing intensity contours. A black diagonal box with the text "bad cleaned" is overlaid on the central region of the map. The map includes a toolbar with options like Pencil, Marker, Luts, Hardcopy, Draw, Zoom, and Refresh. On the right, technical details are listed:
 - Source: CHICYG
 - Line: 12CO21
 - Frequency: 230.53799 GHz
 - Beam: 1.67 x 1.23 PA 81°
 - Level step: 0.2 Jy/beam
 - 2.24 K
 - Box marking: VELOCITY
 - Channels: [0,0]The bottom right corner of the map window shows the user name "ccarrizo" and the timestamp "28-SEP-2006 10:45:47".
- Terminal Window:** A command-line interface showing the following output:

```
File Edit View Terminal Go Help
Map maximum 3.8308 at 257 256
Map minimum 0.24576 at 336 377
I-HOGBOM, Cleaned 66.6 Jy with 300 clean components
MAPPING>
I-LEVELS, Contour levels are :
-0.2000 0.2000 0.4000 0.6000 0.8000
1.000 1.200 1.400 1.600 1.800
2.000 2.200 2.400 2.600 2.800
3.000 3.200
MAPPING>
```

We all agree now:

An inspection of the data in the
uv-plane saves time

Data analysis in the *uv*-plane

procedures and tasks

```
MAPPING> go uvall
```

```
MAPPING> input uvall
```

```
MAPPING> run uv_compress
```

```
MAPPING> help uv_compress
```

Data analysis in the *uv*-plane

```
MAPPING> run ...
```

```
MAPPING> help ...
```

uv_applyphase	uv_dft	uv_merge	uv_solve
uv_ascal	uv_extract	uv_mflag	uv_sort
uv_atm	uv_fidelity	uv_model	uv_splitfield
uv_average	uv_fit-s	uv_mult	uv_stat
uv_cal	uv_flag	uv_noise	uv_subtract
uv_ccmodel	uv_fmodel	uv_observe	uv_table
uv_cct	uv_gain	uv_pointing	uv_timeaverage
uv_center	uv_hanning	uv_selfcal	uv_timebase
uv_circle	uv_hybrid	uv_shift	uv_track
uv_clip	uv_list	uv_short	uv_track_phase
uv_compress	uv_map	uv_single	uv_zero
uv_cuts	uv_mcal	uv_sinusphase	

Data analysis in the *uv*-plane

uv_applyphase

uv_ascal

uv_atm

uv_average

uv_cal

uv_ccmodel

uv_cct

uv_center

uv_circle

uv_clip

uv_compress

uv_cuts

uv_lst

uv_map

uv_mcal

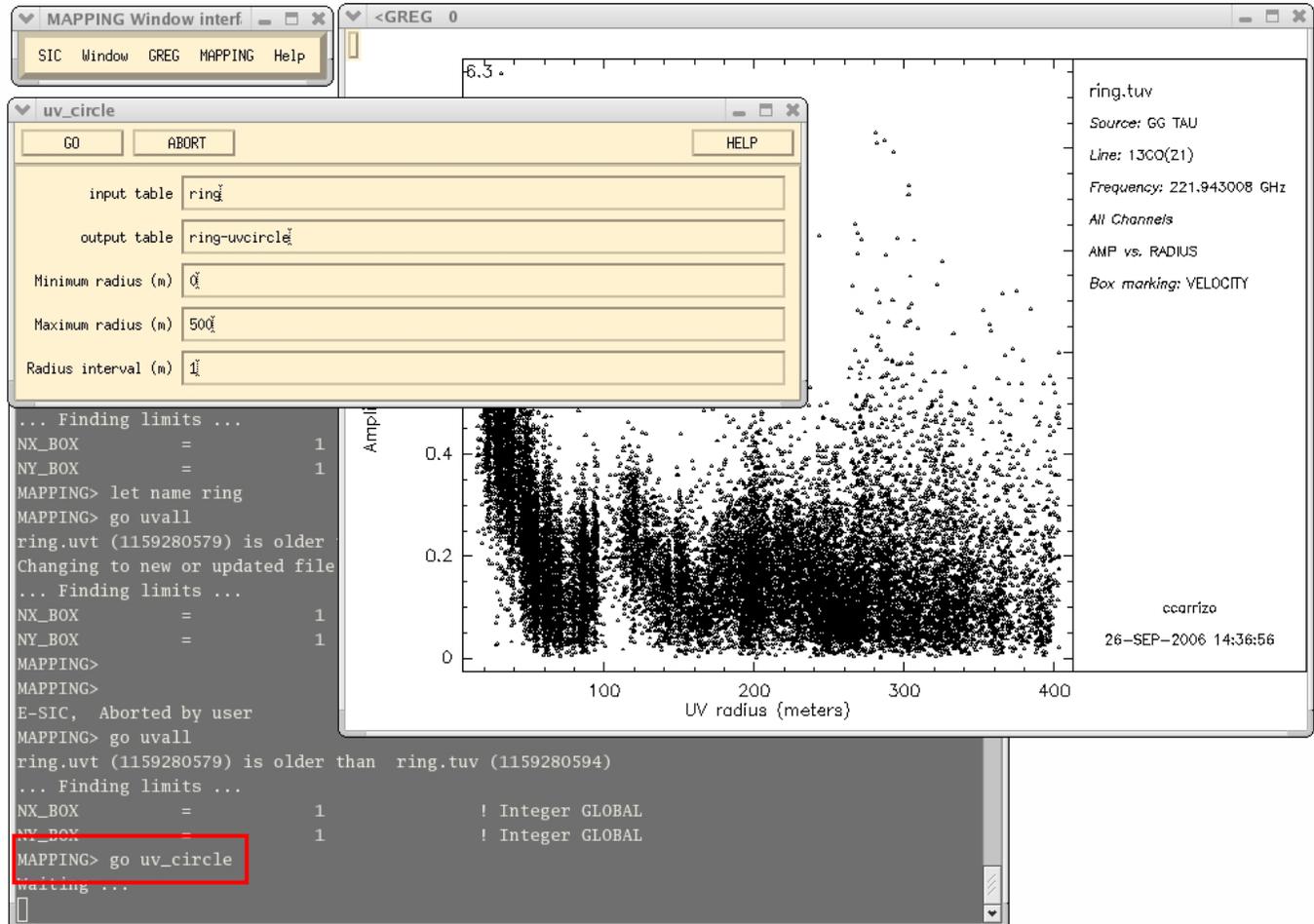
uv_short

uv_single

uv_sinusphase

uv_track_phase

uv_zero



Data analysis in the *uv*-plane

uv_applyphase

uv_ascal

uv_atm

uv_average

uv_cal

uv_ccmodel

uv_cct

uv_center

uv_circle

uv_clip

uv_compress

uv_cuts

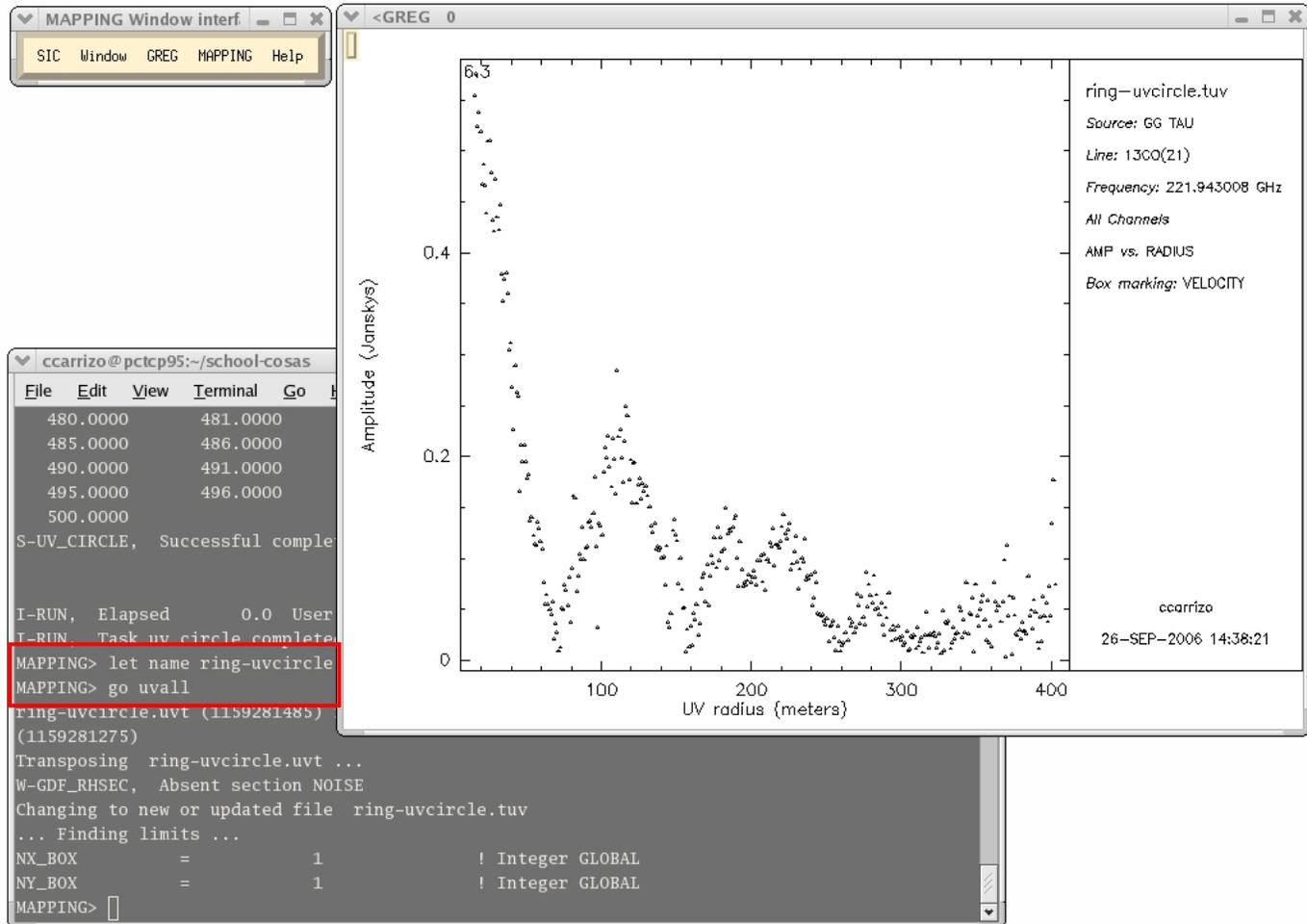
uv_map

uv_mcal

uv_single

uv_sinusphase

uv_zero



Data analysis in the uv-plane

MAPPING Window interf. <GREG 0

SIC Window GREG MAPPING Help

UV actions control panel

GO ABORT HELP

Generic name ring

UV Clip UV_CLIP UV_CLIP_parameters Help

UV Plots UVALL

UV_SHIFT UV_SHIF

UV fit(SLATEC) UV_FIT-

Plotting UV fits PLOTFI

UV_FIT parameters

First channel 0

Last channel 0

UV range(min, max) (meters) 0 500

Number of Functions (1 or 2) 1

Function 1: POINT

Parameters 0 0 0 0 0

Starting range 0 0 0 0 0

numb. of starts 0 0 0 0 0

Subtract function No

Function 2:

Parameters 0 0 0 0 0

Starting range 0 0 0 0 0

numb. of starts 0 0 0 0 0

Subtract function No

Choices

POINT

C_GAUSS

E_GAUSS

C_DISK

E_DISK

RING

EXP

POWER-2

POWER-3

U_RING

ring.tuv

Source: GG TAU

Line: 13CO(21)

Frequency: 221.943008 GHz

All Channels

AMP vs. RADIUS

Box marking: VELOCITY

ccarrizo

26-SEP-2006 14:24:45

```
Changing to new or updated font
S-CHAR, Fonts loaded
... Finding limits ...
NX_BOX =
NY_BOX =
MAPPING> MAPPING> MAPPING>
ring.uvt (1159280579) is
... Finding limits ...
NX_BOX =
NY_BOX =
MAPPING> cle a
MAPPING> let name ring
MAPPING> let type uvt
MAPPING> go uvall
ring.uvt (1159280579) is
... Finding limits ...
NX_BOX =
NY_BOX =
MAPPING> cle a
MAPPING>
MAPPING>
```

uv_fit-s

uv_compress

uv_map

uv_single

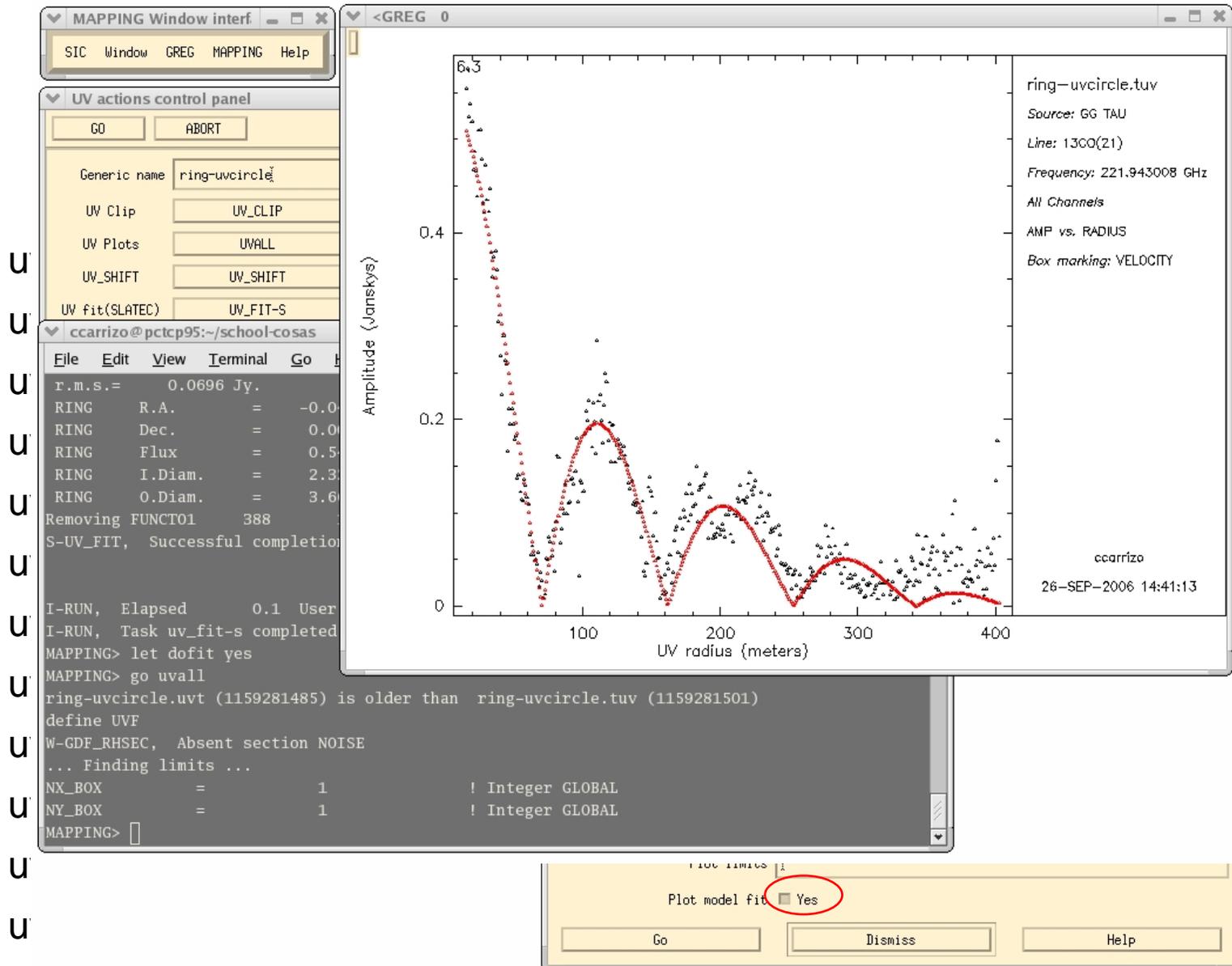
uv_zero

uv_cuts

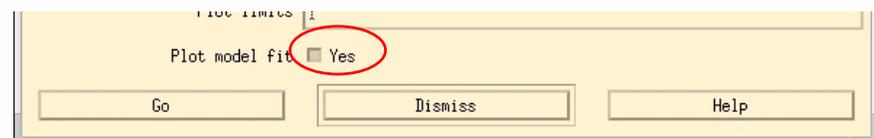
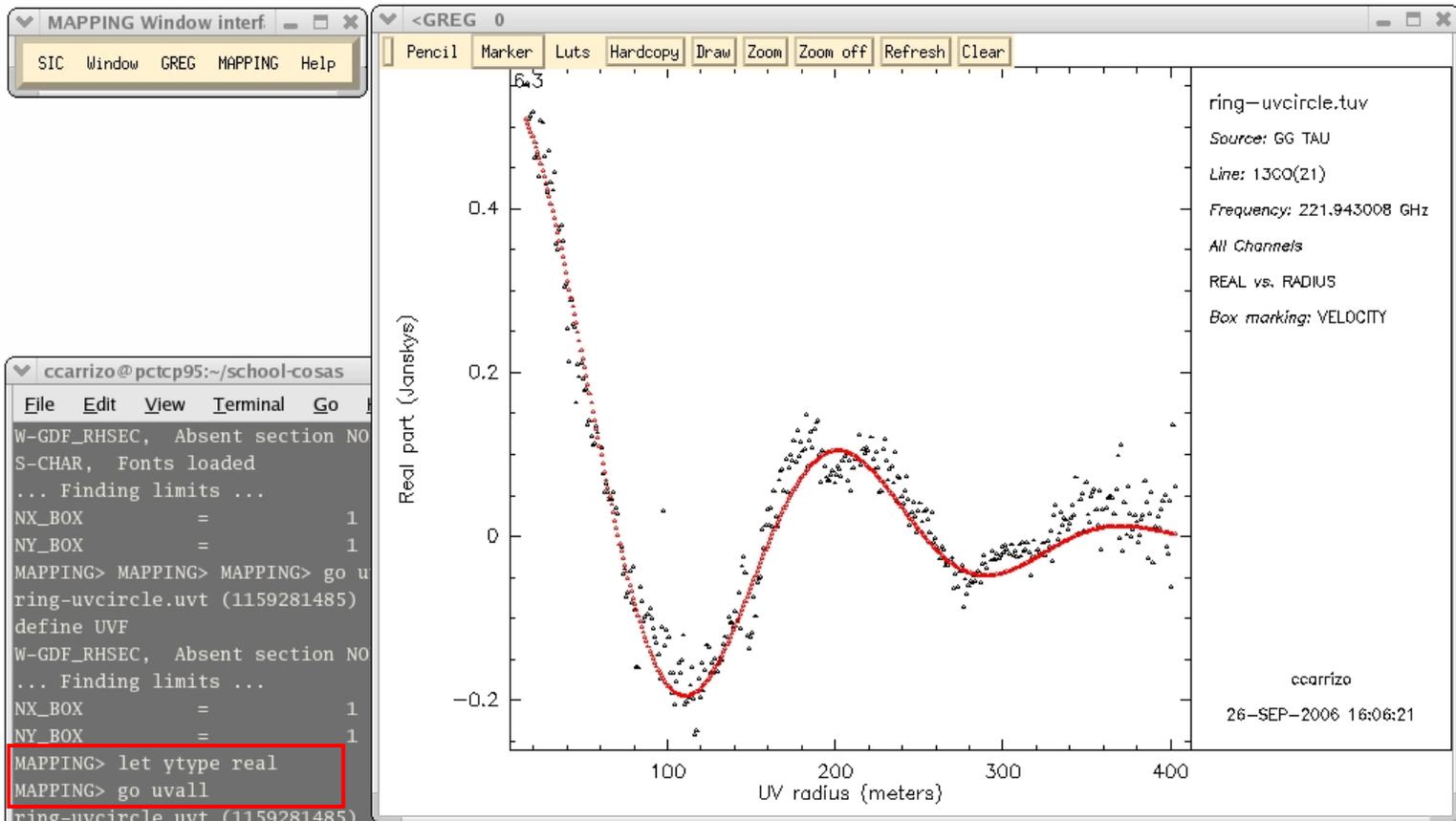
uv_mcal

uv_sinusphase

Data analysis in the *uv*-plane



Data analysis in the *uv*-plane



Data analysis in the *uv*-plane

The screenshot displays a software interface for uv-plane data analysis. It consists of several overlapping windows:

- MAPPING Window interf**: A menu bar with options: SIC, Window, GREG, MAPPING, Help.
- <GREG 0**: A window showing a grid of uv-coverage plots. Metadata on the right includes: point2.tuv, Source, Line: h41a, Frequency: 92.034438 GHz.
- UV actions control panel**: A control panel with buttons for GO, ABORT, and HELP. It contains a table for configuring actions:

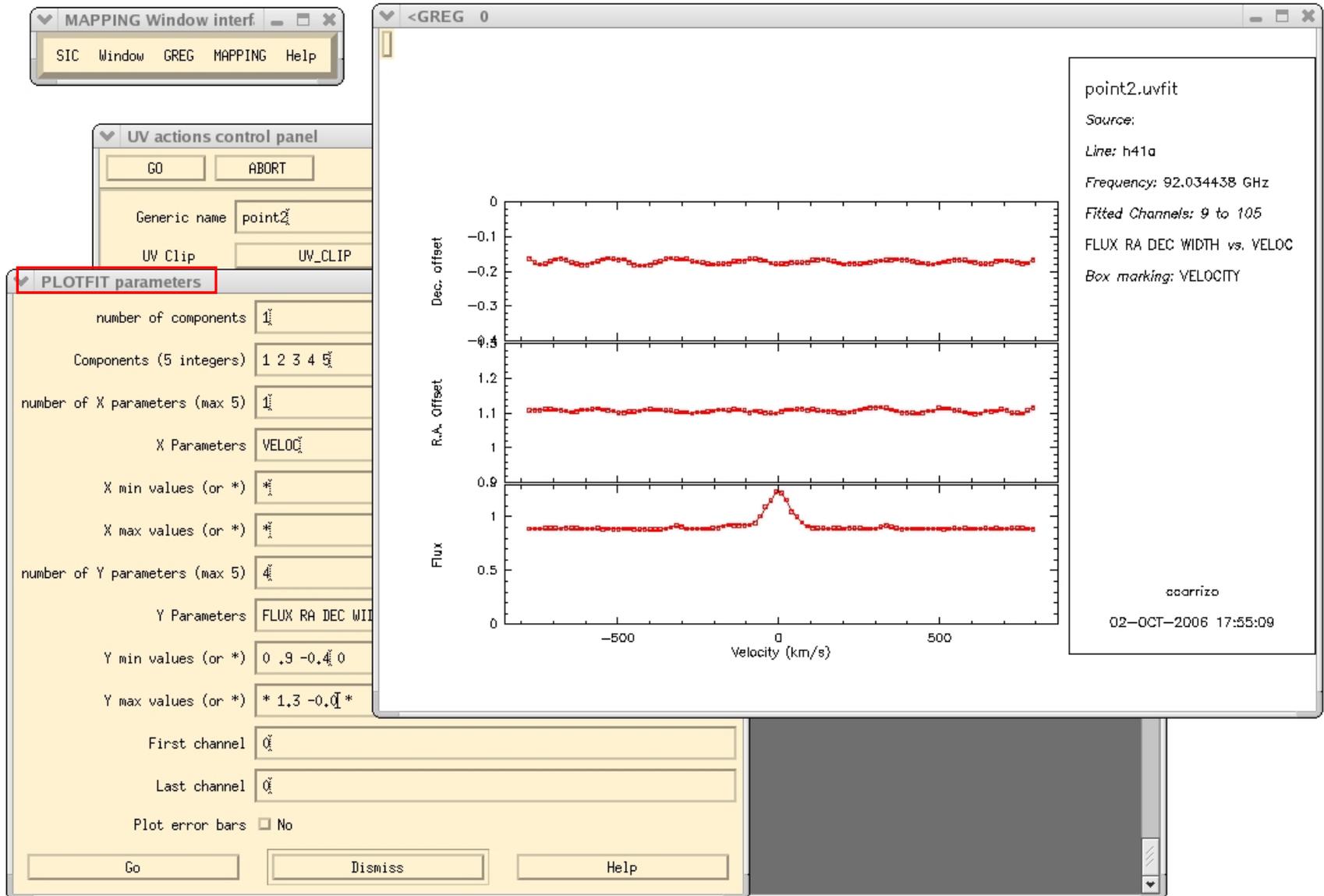
Generic name	Value	Parameter
UV Clip	UV_CLIP	UV_CLIP parameter
UV Plots	UVALL	UVALL parameter
UV_SHIFT	UV_SHIFT	UV_SHIFT parameter
UV fit(SLATEC)	UV_FIT-S	UV_FIT parameter

- UV_FIT parameters**: A dialog box for configuring fit parameters. The 'Function 1' dropdown is set to 'POINT'. The 'Number of Functions (1 or 2)' is set to 1. The 'Function 1' dropdown is highlighted with a red box.

- Terminal window (ccarrizo@pctcp95:~/school-cosas)**: Shows the execution of the UV_FIT process. The output includes:

```
I-UV_FIT, Starting minimization on channel 106  
-757.4877  
I-UV_FIT, Starting from 0.0000 0.0000 0.0000  
r.m.s.= 0.5298 Jy.  
POINT R.A. = 1.10933 ( 0.00215) 20:32  
POINT DEC. = -0.17432 ( 0.00238) 40:39  
POINT FLUX = 0.89026 ( 0.00315)  
  
I-UV_FIT, 6570 data points for channel 106  
I-UV_FIT, Starting minimization on channel 106  
-773.7747  
I-UV_FIT, Starting from 0.0000 0.0000 0.0000  
r.m.s.= 0.5262 Jy.  
POINT R.A. = 1.10746 ( 0.00214) 20:32  
POINT DEC. = -0.16240 ( 0.00237) 40:39  
POINT FLUX = 0.88733 ( 0.00313)  
  
W-UV_FIT, No data for channel 106
```

Data analysis in the *uv*-plane



Data analysis in the *uv*-plane

The image displays a software interface for uv-plane data analysis. It consists of several overlapping windows:

- MAPPING Window interf**: A menu bar with options: SIC, Window, GREG, MAPPING, Help.
- <GREG 0**: A window showing the file name `point2.uvfit` and its properties:
 - Source: `h41a`
 - Frequency: `92.034438 GHz`
 - Fitted Channels: `9 to 105`
- UV actions control panel**: A control panel with buttons for `GO`, `ABORT`, and `HELP`. It includes a "Generic name" field set to `point2` and a table of actions:

UV Clip	UV_CLIP	UV_CLIP param
UV Plots	UVALL	UVALL param
UV_SHIFT	UV_SHIFT	UV_SHIFT param
UV fit(SLATEC)	UV_FIT-S	UV_FIT param
- UV_FIT parameters**: A dialog box for configuring the fit parameters:
 - First channel: `0`
 - Last channel: `0`
 - UV range(min, max) (meters): `0 500`
 - Number of Functions (1 or 2): `1`
 - Function 1: `C_GAUSS` (highlighted in red)
 - Parameters: `0 0 0 1 0 0`
 - Starting range: `0 0 0 0 0 0`
 - numb. of starts: `0 0 0 0 0 0`
 - Subtract function: No
 - Function 2: (empty)
 - Parameters: `0 0 0 0 0 0`
 - Starting range: `0 0 0 0 0 0`
 - numb. of starts: `0 0 0 0 0 0`
 - Subtract function: No
- Terminal window (ccarrizo@pctcp95:~/school-cosas)**: Shows the output of the fit process:

```
I-UV_FIT, Starting from 0.0000 0.0000 0.0000
r.m.s.= 0.5282 Jy.
C_GAUSS R.A. = 1.10683 ( 0.00223) 20:
C_GAUSS Dec. = -0.17808 ( 0.00243) 40:
C_GAUSS Flux = 0.95585 ( 0.00557)
C_GAUSS F.W.H.P. = 0.40077 ( 0.01392)

I-UV_FIT, 6570 data points for channel
I-UV_FIT, Starting minimization on channel
-757.4877

I-UV_FIT, Starting from 0.0000 0.0000 0.0000
r.m.s.= 0.5259 Jy.
C_GAUSS R.A. = 1.10728 ( 0.00222) 20:
C_GAUSS Dec. = -0.17311 ( 0.00242) 40:
C_GAUSS Flux = 0.95381 ( 0.00554)
C_GAUSS F.W.H.P. = 0.39541 ( 0.01404)

I-UV_FIT, 6570 data points for channel
I-UV_FIT, Starting minimization on channel
```

Data analysis in the uv -plane



Before concluding on a certain source extent, check that the relative flux calibration between tracks with longer and shorter baselines is correct

UV Clip UV_CLIP

PLOTFIT parameters

number of components: 1

Components (5 integers): 1 2 3 4

number of X parameters (max 5): 1

X Parameters: VELOC

X min values (or *): *

X max values (or *): *

number of Y parameters (max 5): 4

Y Parameters: FLUX RA DEC

Y min values (or *): 0 .9 -0.4

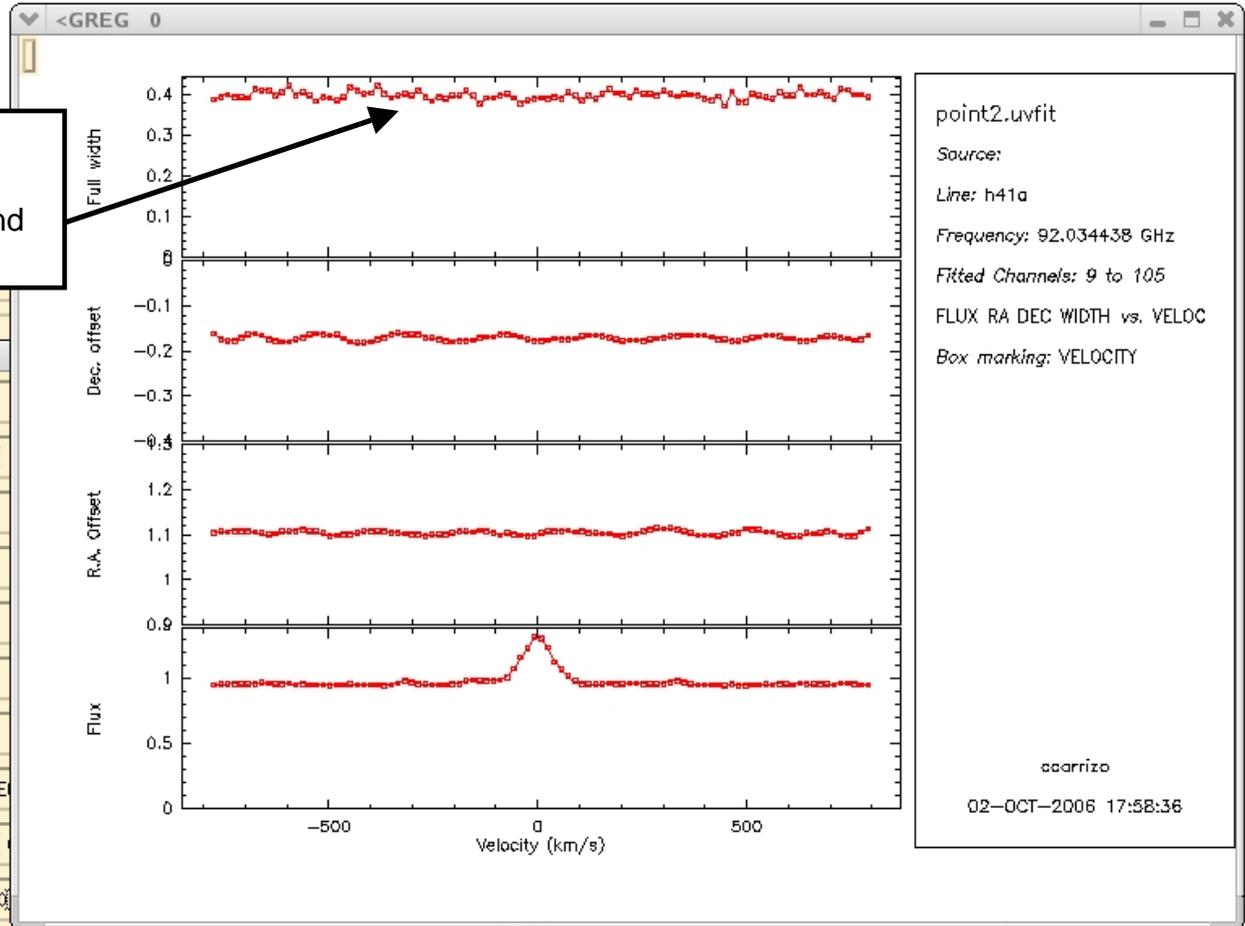
Y max values (or *): * 1.3 -0.0

First channel: 0

Last channel: 0

Plot error bars: No

Go Dismiss Help



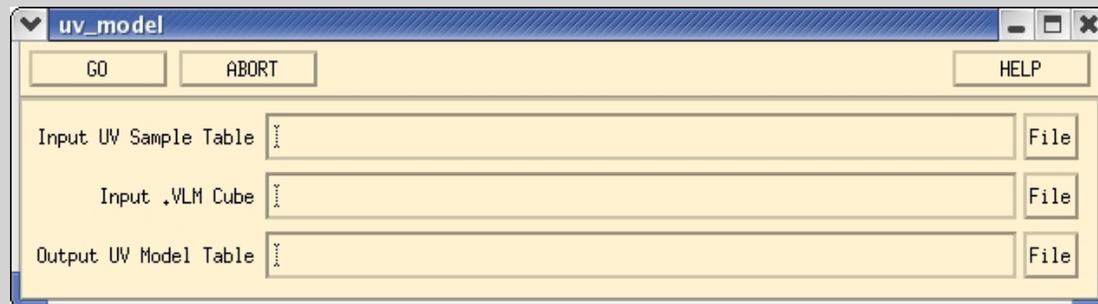
Data analysis in the *uv*-plane

```
MAPPING> run ...
```

```
MAPPING> help ...
```

uv_applyphase	uv_dft	uv_merge	uv_solve
uv_ascal	uv_extract	uv_mflag	uv_sort
uv_atm	uv_fidelity	uv_model	uv_splitfield

uv_averag
uv_cal
uv_ccmod
uv_cct
uv_center
uv_circle
uv_clip



To create a *uv* table from an image, e.g. a model

uv_compress	uv_map	uv_single	uv_zero
uv_cuts	uv_mcal	uv_sinusphase	

Data analysis in the *uv*-plane

uv_subtract

GO ABORT HELP

UV table to subtract from

UV table used as continuum

The smoothing time constant in seconds

The continuum channel

How many times should the continuum be subtracted

To subtract a time-averaged continuum *uv* table

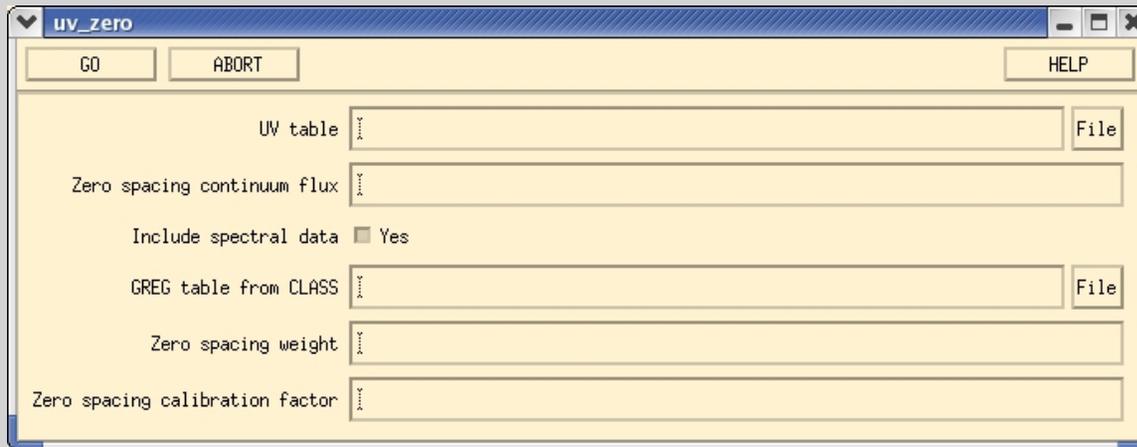
— solve
— sort
— splitfield
— stat

uv_cal	uv_flag	uv_noise	uv_subtract
uv_ccmodel	uv_fmodel	uv_observe	uv_table
uv_cct	uv_gain	uv_pointing	uv_timeaverage
uv_center	uv_hanning	uv_selfcal	uv_timebase
uv_circle	uv_hybrid	uv_shift	uv_track
uv_clip	uv_list	uv_short	uv_track_phase
uv_compress	uv_map	uv_single	uv_zero
uv_cuts	uv_mcal	uv_sinusphase	

Data analysis in the *uv*-plane

```
MAPPING> run ...
```

```
MAPPING> help ...
```



To add a single-dish zero-spacing spectrum

solve

sort

splitfield

stat

subtract

table

timeaverage

timebase

uv_track

uv_track_phase

uv_zero

uv_circle

uv_hybrid

uv_short

uv_track

uv_clip

uv_list

uv_short

uv_track_phase

uv_compress

uv_map

uv_single

uv_zero

uv_cuts

uv_mcal

uv_sinusphase

Data analysis in the *uv*-plane

The screenshot displays a software interface for data analysis in the *uv*-plane. The main window is titled "MAPPING Window interf" and has a menu bar with "SIC", "Window", "GREG", "MAPPING", and "Help". The "MAPPING" menu is open, showing options: "Change Default File Extensions...", "Interferometric UV operations", "Clean Beam Estimation", "Short Space Processing" (highlighted with a red circle), and "Interferometric Simple Mapping".

A dialog box titled "Short-spacings processing" is open, featuring a "PIPELINE PROCESSING" section. It contains the following fields and buttons:

- Single-Dish input table (.tab): co21-pv.tab [File]
- Interferometer uv-tables (GENERIC name): co21-pdt [File]
- Output merged uv-tables (GENERIC name): co21-merged [File]
- Single-Dish data unit: Tmb [Choices]
- SD amplitudes scaling factor: 1 []
- SD weights scaling factor: 1 []
- Check input data: CHECK [Help]
- Create short-spacings UV tables from SD data: MAKE SD-UVT [Parameters] [Help]
- Merge SD and interferometer UV tables: MERGE [Parameters] [Help]

Buttons "GO", "ABORT", and "HELP" are located at the top of the dialog box.

In the background, a terminal window shows the execution of a script with the following output:

```
ccarrizo@pctc
File Edit View
Input paramet
UV_TAP
MAP_SI
MAP_CE
MCOL [
Variab
Map no

- Cleaning met
Input paramet
GAIN [
NITER
FRES [
BLC [
MAJOR
ANGLE

Mosaic mode
MAPPING> [ ]

on /home/ccarrizo/gilproc/080512/add-sh-uvmerge.map
I-BEGIN, Defining add-sh-doit
on /home/ccarrizo/gilproc/080512/add-sh-uvmerge.map
I-BEGIN, Defining add-sh-uvshort
on /home/ccarrizo/gilproc/080512/add-sh-uvmerge.map
I-BEGIN, Defining add-sh-uvmerge
on /home/ccarrizo/gilproc/080512/add-sh-uvmerge.map
I-BEGIN, Defining add-sh-sdweight
on /home/ccarrizo/gilproc/080512/add-sh-sdweight.map
I-BEGIN, Defining add-sh-check-init
on /home/ccarrizo/gilproc/080512/add-sh-check-init.map
I-BEGIN, Defining add-sh-gui
on /home/ccarrizo/gilproc/080512/add-sh-gui.map
MAPPING> [ ]
```

Data analysis in the uv -plane

uv tables are fully editable

uv table [visib dimension, # visibilities]

Each visibility contains:

visib dimension = $7 + 3 \times (\# \text{ channels})$

- u in meters
- v in meters
- scan number
- observation date (CLASS number)
- time in seconds (since date above)
- start antenna in the baseline
- end antenna in the baseline

7 visib. characteristics

- real part for 1st channel
- imaginary part 1st channel
- weight 1st channel

data at 1st channel

- real part for 2nd cha
- imaginary part 2nd cha
- ...

```
mapping> define table aa mytable.uvt write
mapping> let aa[8,2380] 6000
mapping> delete /variable aa
```

To conclude:

- Always an inspection of data in the uv -plane
- A more detailed analysis can be performed in the uv -plane: detection, modeling of simple structures, relative calibration to be checked, etc