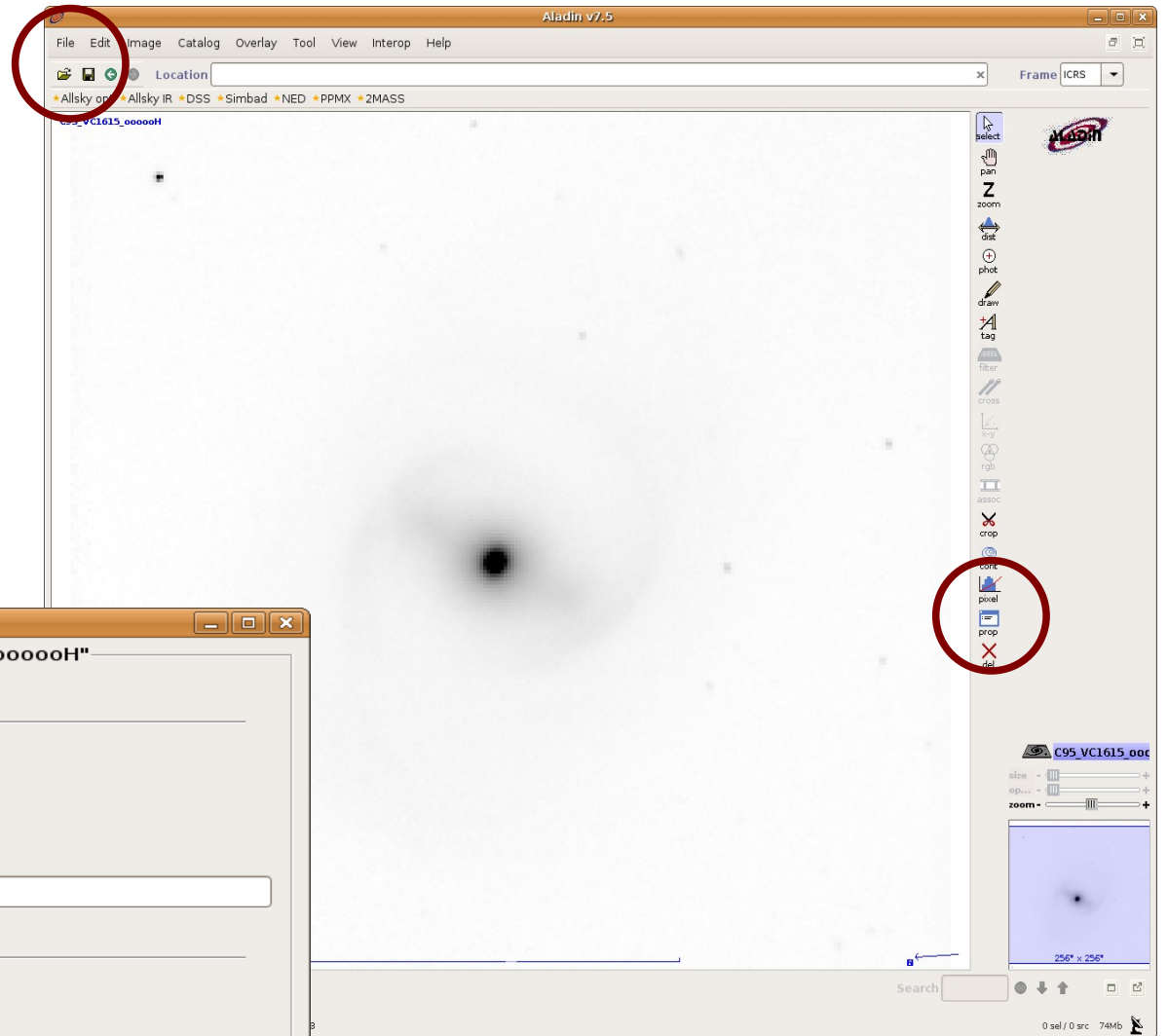


Astrometric calibration with Aladin

Bernd Vollmer
CDS, Observatoire de Strasbourg
15.06.2012

(uncalibrated image from the GoldMine database; Gavazzi et al. 2003)

- Load the uncalibrated image (*File* → *Open local file...*)
- Get header information (*prop* on right column)
- Click on *New* (Astrometrical reduction)



- Put the coordinates and associated pixels (e.g. from SIMBAD)
- Guess the pixel size
- Click on *modify*

Astrometrical calibration

Choose a calibration method, fill up the corresponding form according to the plane "C95_VC1615_00000H"

Label:

by parameters | by matching stars | by WCS header

Coordinates (J2000):

Corresp. pos. (x y):

Pixel ang. size:

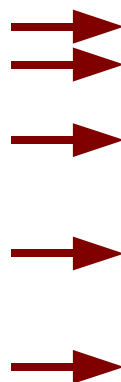
Coordinate frame:

Projection:

Rotation (deg):

RA symmetry: True False

CREATE Undo Redo Help Reset Clear Close



Astrometrical calibration

Adjust the following form according to the plane "C95_VC1615_00000H"

Label:

by parameters | by matching stars | by WCS header

Coordinates (J2000):

Corresp. pos. (x y):

Pixel ang. size:

Coordinate frame:

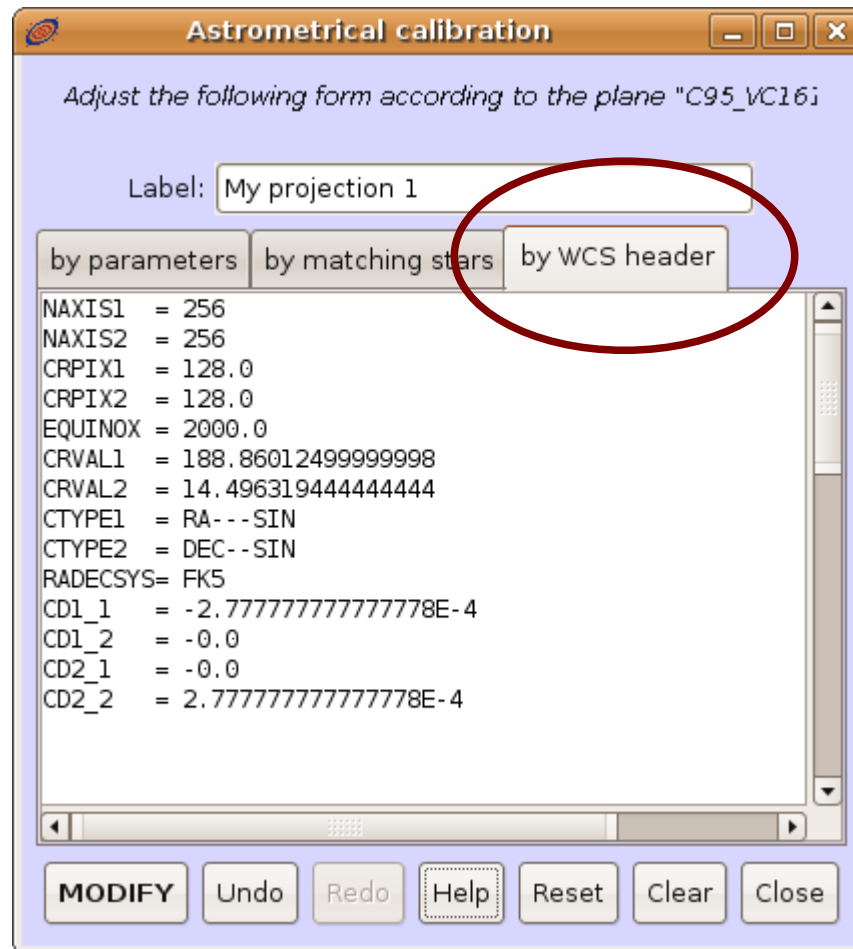
Projection:

Rotation (deg):

RA symmetry: True False

MODIFY Undo Redo Help Reset Clear Close

- By clicking on *by WCS header*, you can check your fits header



- Chose a calibrated image from your preferred image database (e.g. Aladin image database; *File* → *Load astronomical image*)

The screenshot shows the Aladin v7.5 web interface. The main window displays a search for 'NGC4548' with a search cone of 0 arcmin. A 'Server selector' dialog box is open, showing a list of image servers and a table of search results. The 'SUBMIT' button in the dialog is circled in red. The main window shows a faint image of the target object.

Server selector dialog details:

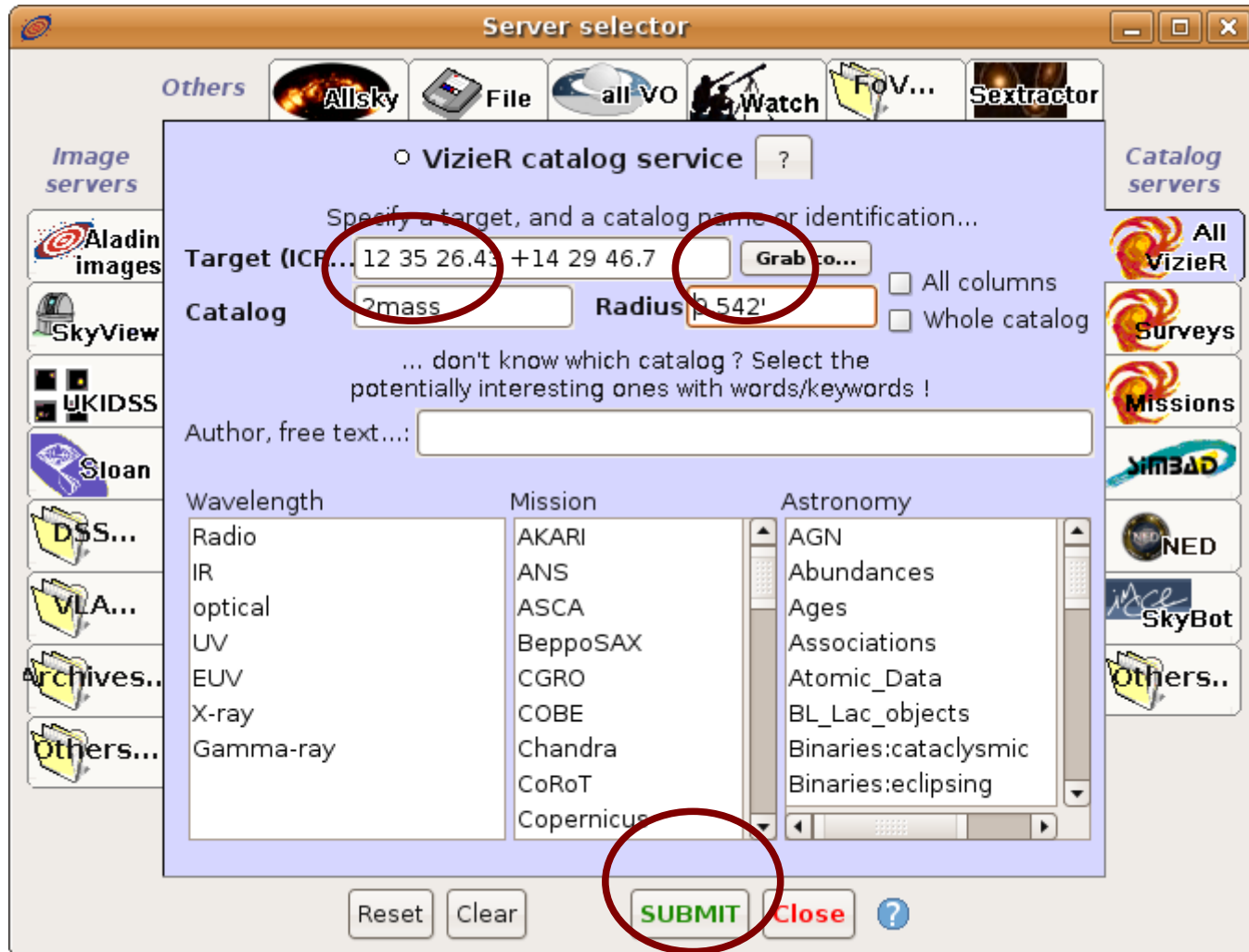
- Target (ICRS, name): NGC4548
- Search cone: 0 arcmin
- Step 2: load one or several images
- Default image format: JPEG FITS

SURVEY	COLOR	SIZE	OBS ID	RES
<input type="checkbox"/> 2MASS	J(IR J)	8.6' x 17.1'	980115N_JI0640115	1.1
<input type="checkbox"/> 2MASS	K(IR K)	8.6' x 17.1'	980115N_KI0640115	1.1
<input type="checkbox"/> 2MASS	H(IR H)	8.6' x 17.1'	980115N_HI0640115	1.1
<input type="checkbox"/> POSSI	0-DSS2(0.41um)	13.0' x 13.0'	435	1.1
<input type="checkbox"/> POSSII	F-DSS2(0.658um)	13.0' x 13.0'	645	1.1
<input type="checkbox"/> POSSII	J-DSS2(0.491um)	13.0' x 13.0'	645	1.1
<input type="checkbox"/> POSSII	N-DSS2(0.84um)	13.0' x 13.0'	645	1.1
<input type="checkbox"/> POSSI	E-DSS1(0.645um)	14.2' x 14.2'	435	1.7
<input type="checkbox"/> POSSI	E-DSS1(0.645um)	1.7° x 1.7°	435-LOW	6.6
<input type="checkbox"/> POSSI	0-DSS2(0.41um)	6.5° x 6.5°	435-PLATE	24.
<input type="checkbox"/> POSSII	F-DSS2(0.658um)	6.5° x 6.5°	645-PLATE	24.

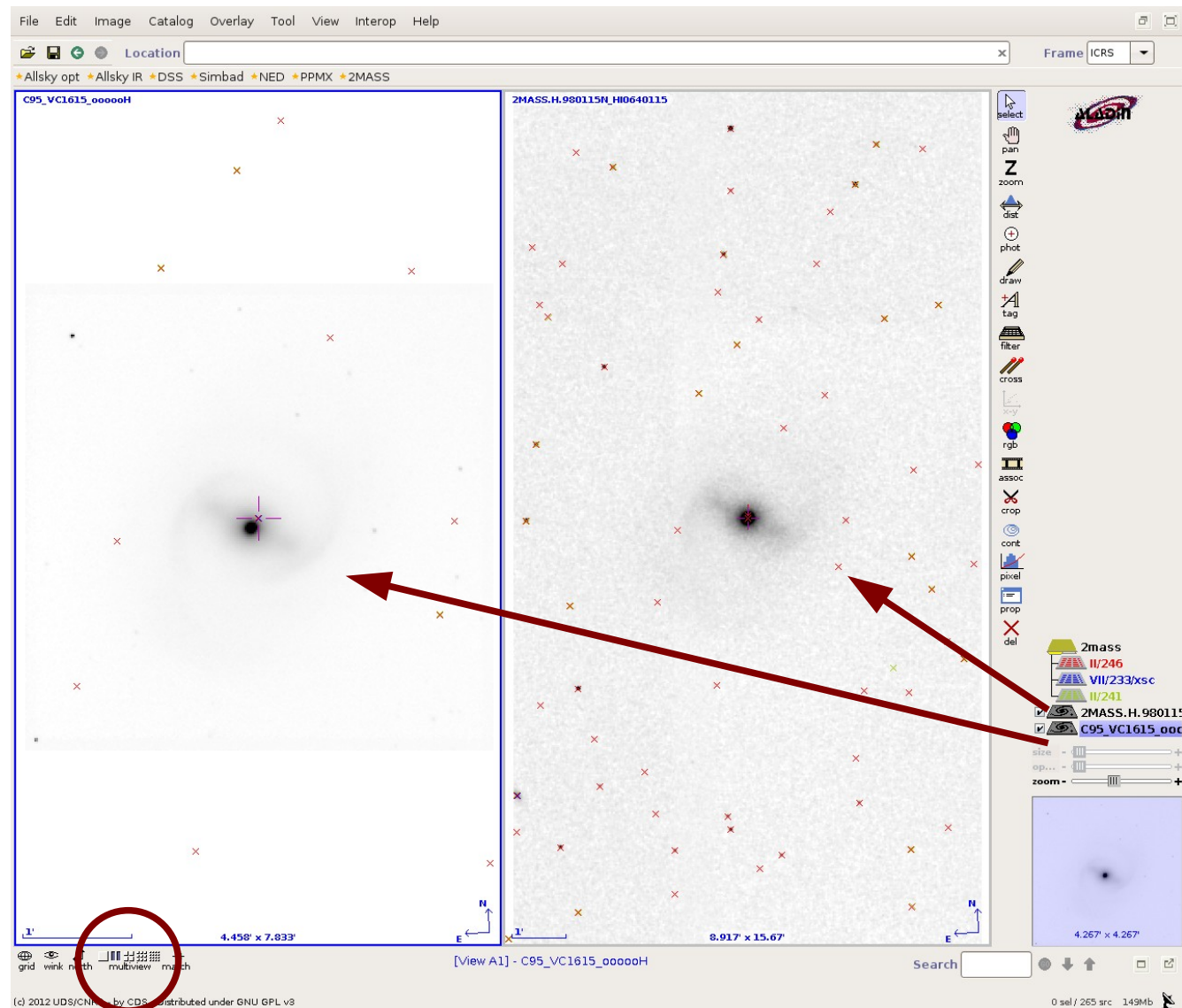
Aladin v7.5 interface details:

- Location: C95_VC1615_oooo0H
- Coordinates: 2.229° x 3.917'
- Image size: 4.267' x 4.267'
- Footer: (c) 2012 UDS/CNRS - by CDS - Distributed under GNU GPL v8

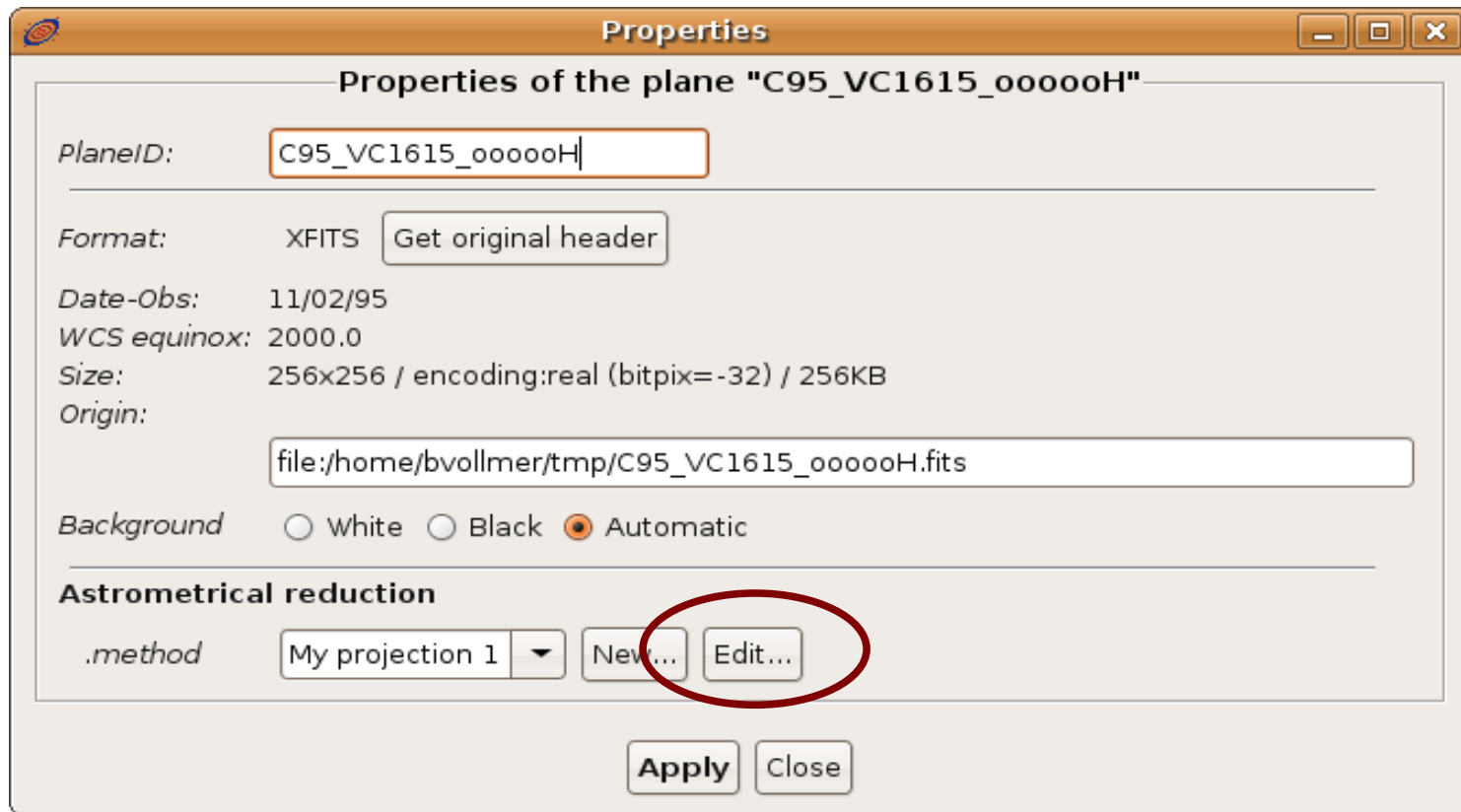
- Chose a point source catalog in this region from the VizieR catalog database (e.g. 2MASS, USNO, GSC; *File* → *Load catalogue*)

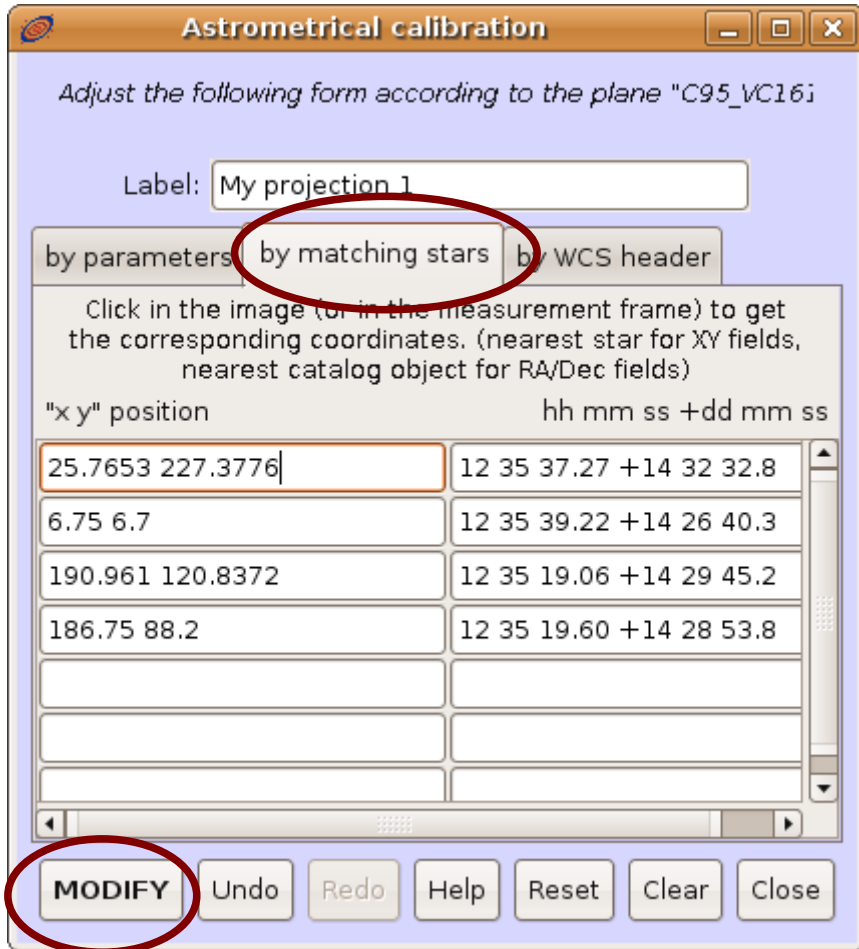


- Change into double view mode (*multiview*)
- You can load an image into a window by clicking and dragging of an image plane on the image stack on the right hand side

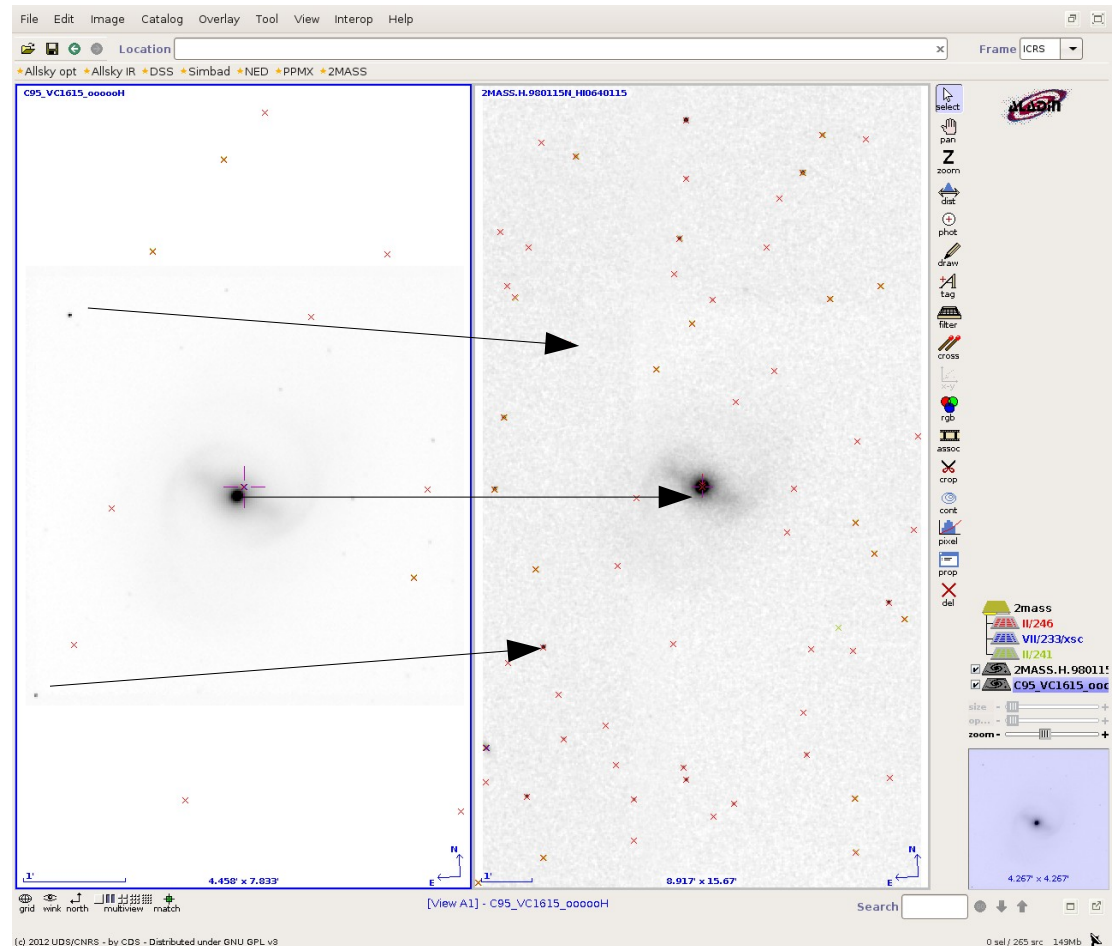


- Activate the uncalibrated image by clicking on its plane on the image stack (the image frame will become blue)
- Click on *prop* on the right column
- *Edit* the image header





- Chose *by matching stars*
- Alternately click on a star on the uncalibrated image and on the corresponding star on the calibrated (2MASS) image
- Click on *modify*; the new image header is calculated



- Change into single view (*multiview*), zoom, and refine your astrometric calibration

Astrometrical calibration

Adjust the following form according to the plane "C95_VC16i

Label:

by parameters | by matching stars | by WCS header

Click in the image (or in the measurement frame) to get the corresponding coordinates. (nearest star for XY fields, nearest catalog object for RA/Dec fields)

"x y" position hh mm ss +dd mm ss

<input type="text" value="25.7653 227.3776"/>	<input type="text" value="12 35 37.27 +14 32 32.8"/>
<input type="text" value="6.75 6.7"/>	<input type="text" value="12 35 39.22 +14 26 40.3"/>
<input type="text" value="190.961 120.8372"/>	<input type="text" value="12 35 19.06 +14 29 45.2"/>
<input type="text" value="186.75 88.2"/>	<input type="text" value="12 35 19.60 +14 28 53.8"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

MODIFY | Undo | Redo | Help | Reset | Clear | Close

13.91' x 10.52'

6.755' x 6.755'

V	RAJ2000	DEJ2000	2MASS	Jmag	e Jmag	Hmag	e Hmag	Kmag	e Kmag	Q...	R...	B...	C...	X' A'
VizieR	188.831683	+14.481625	12351960+1428538	16.824	0.138	16.024	0.176	15.727	0.164	BCC	222	111	000	0 0
VizieR	188.831654	+14.481671	16.789	0.133	15.830	15.731	0.169	202	101	000	0 0			

(c) 2012 UDS/CNRS - by CDS - Distributed under GNU GPL v3

2 sel / 265 src 75Mb

- Save the fits file with the new astrometric calibration (*File* → *Export planes*)

