CONFIRMATION OF AN APPARENT SUPERNOVA IN THE HOST GALAXY ngc6946

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Summary

Check the apparent supernova (sn2008s) in ngc6946 comparing the image with POSS red, blue and IR

Astrometrical calibration of the image

Coordinates and offset of the supernova

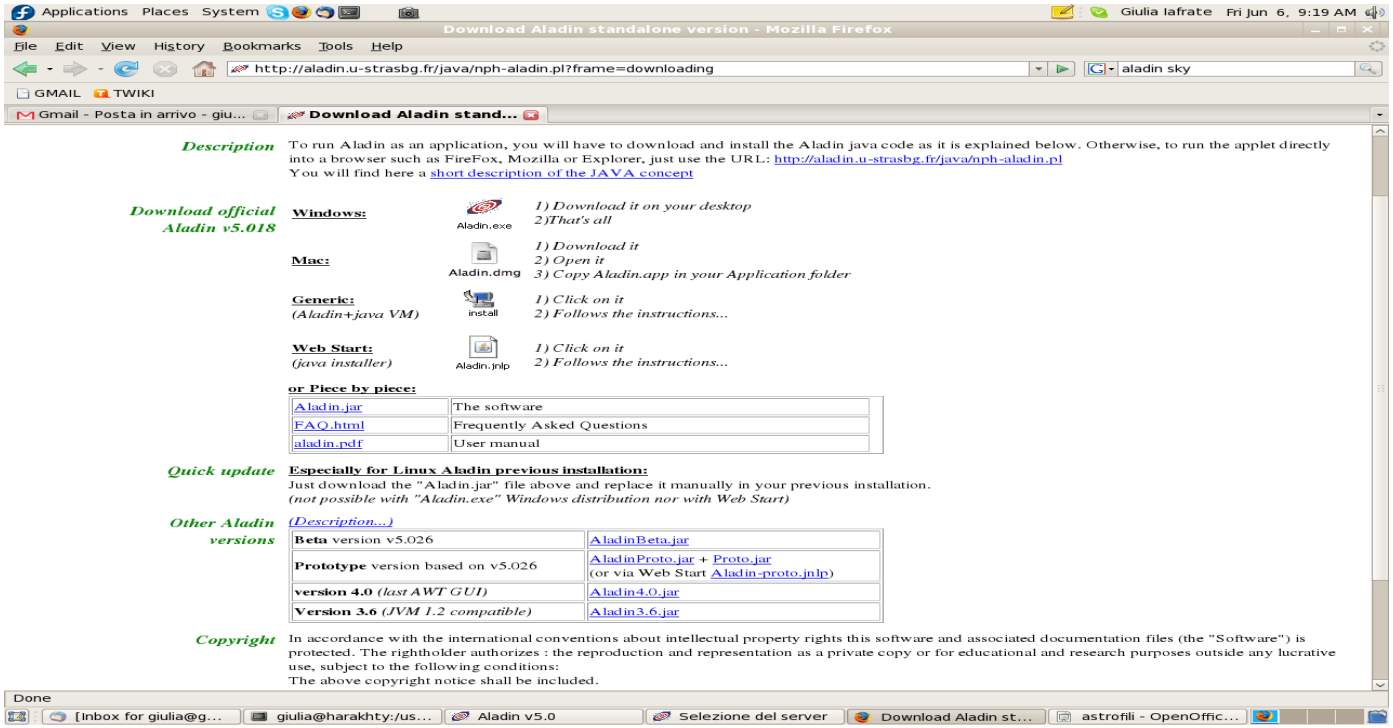
Display the other supernovae in the same galaxy

Display information and bibliographic references of the other supernovae in the same galaxy

Aladin

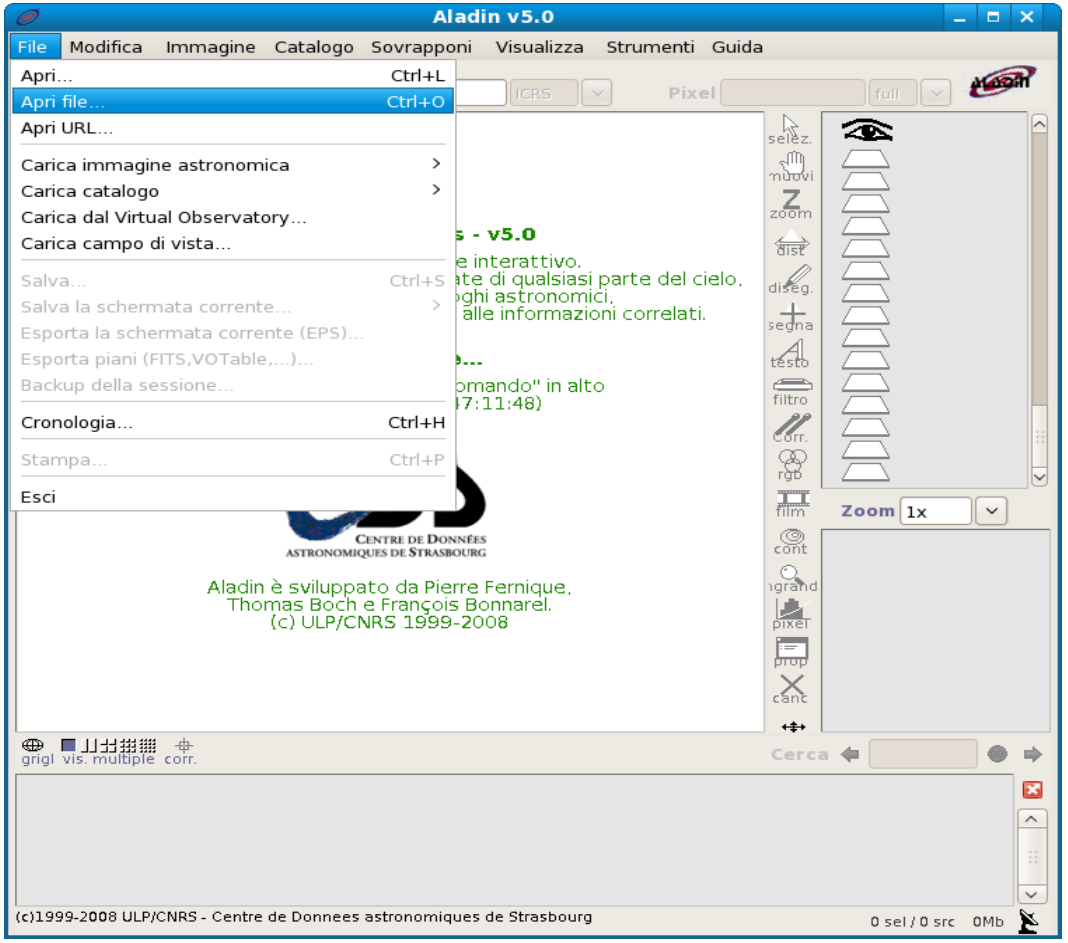
To load a local image download the “stand alone” version of Aladin from

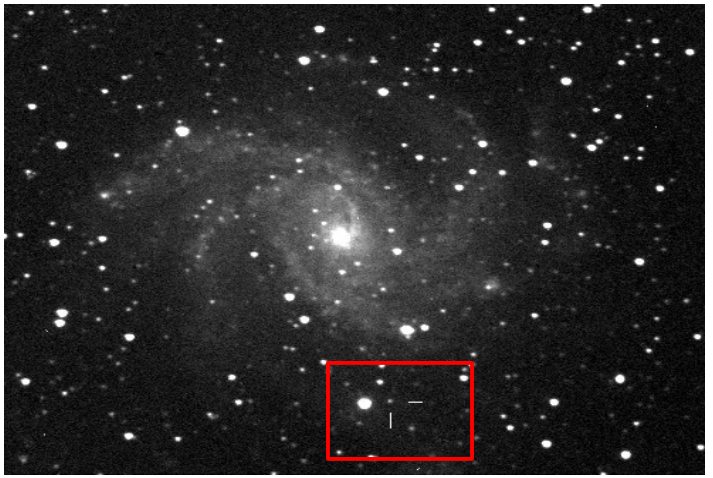
http://aladin.u-strasbg.fr/java/nph-aladin.pl?frame=downloading



Load the image to verify

Open in Aladin the image ngc6946.fits with the apparent supernova (in the red box)



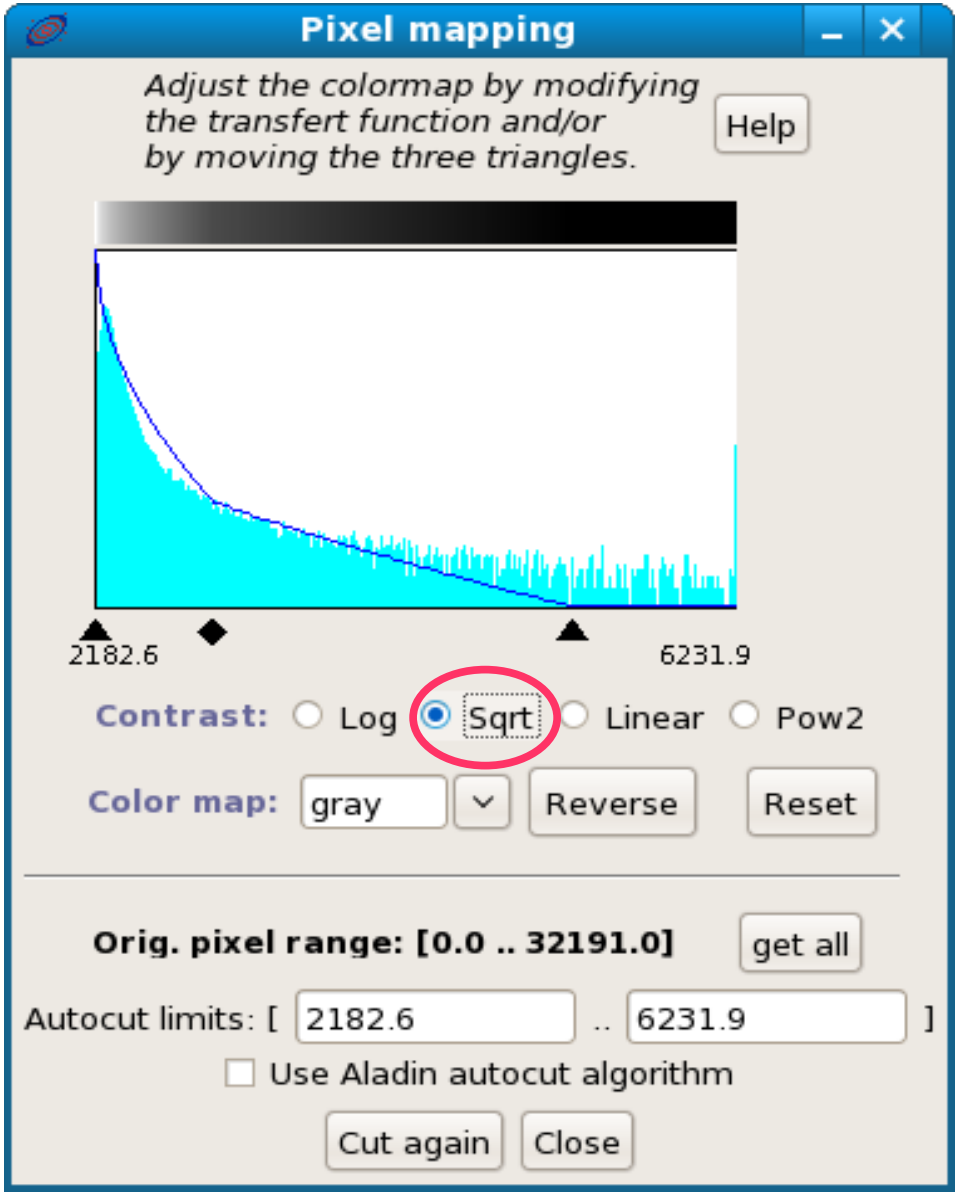


CROSS image – Col drusciè Remote Observatory Supernovae Search

Load the image to verify

In the pixel mapping window (button "*pixel*") select contrast --> sqrt

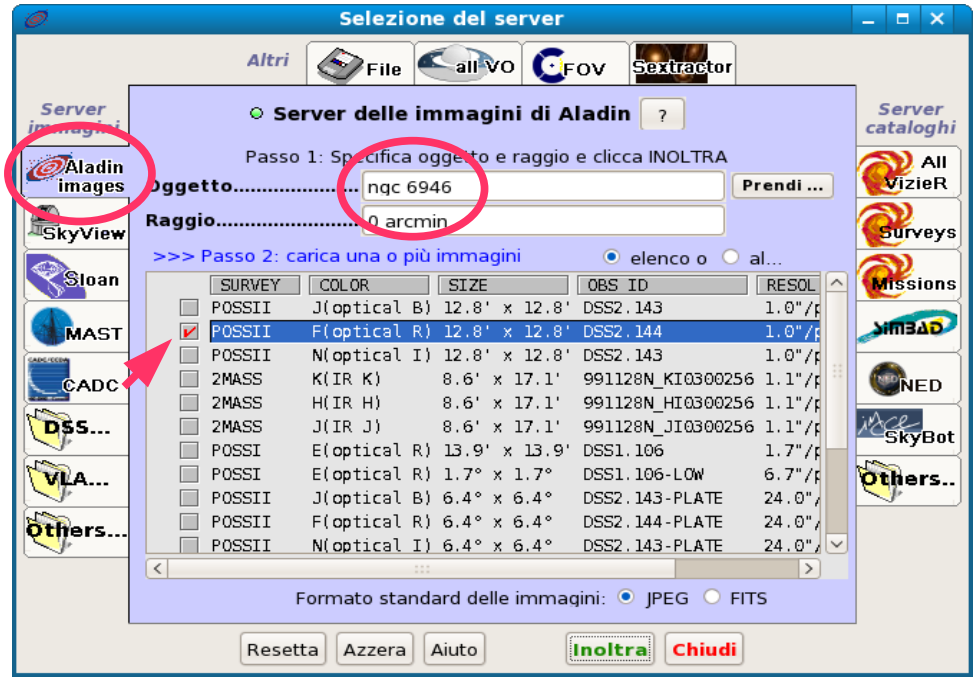
Modify the stretch to obtain a better view of the image

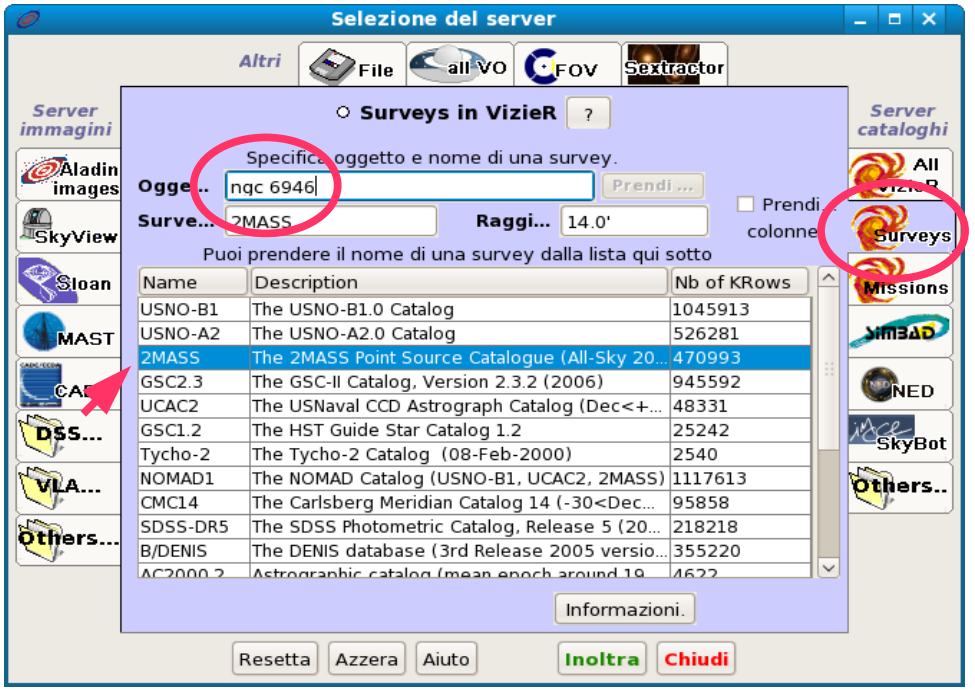


Astrometrical calibration

Load a calibrated image (e.g. POSS red)

Load a reference catalog (e.g. 2MASS)

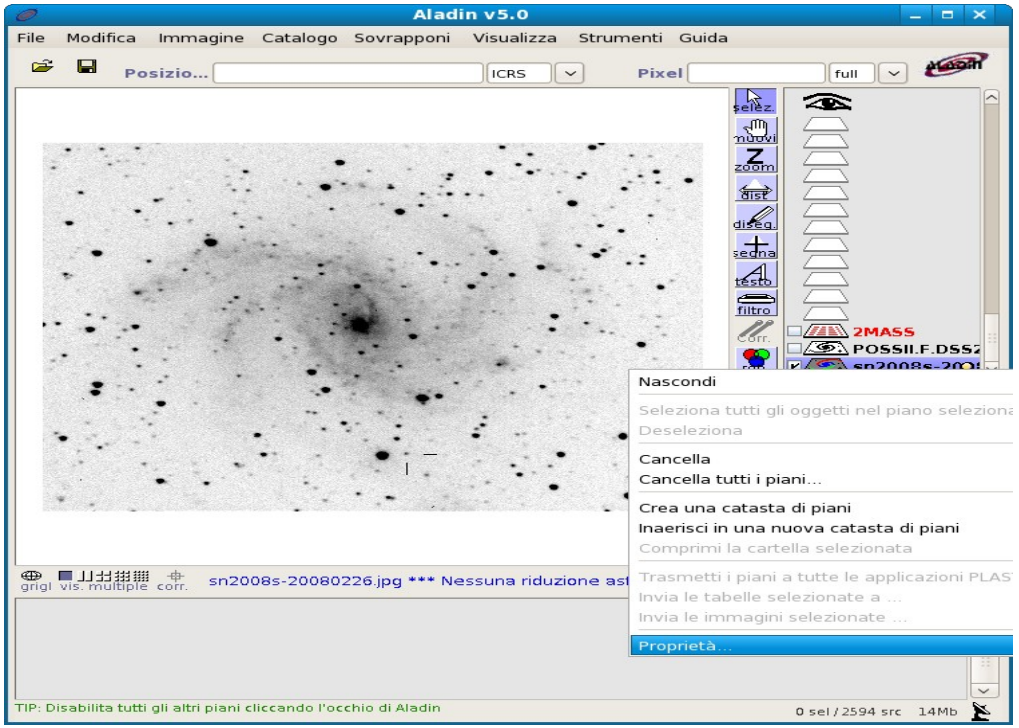




Astrometrical calibration

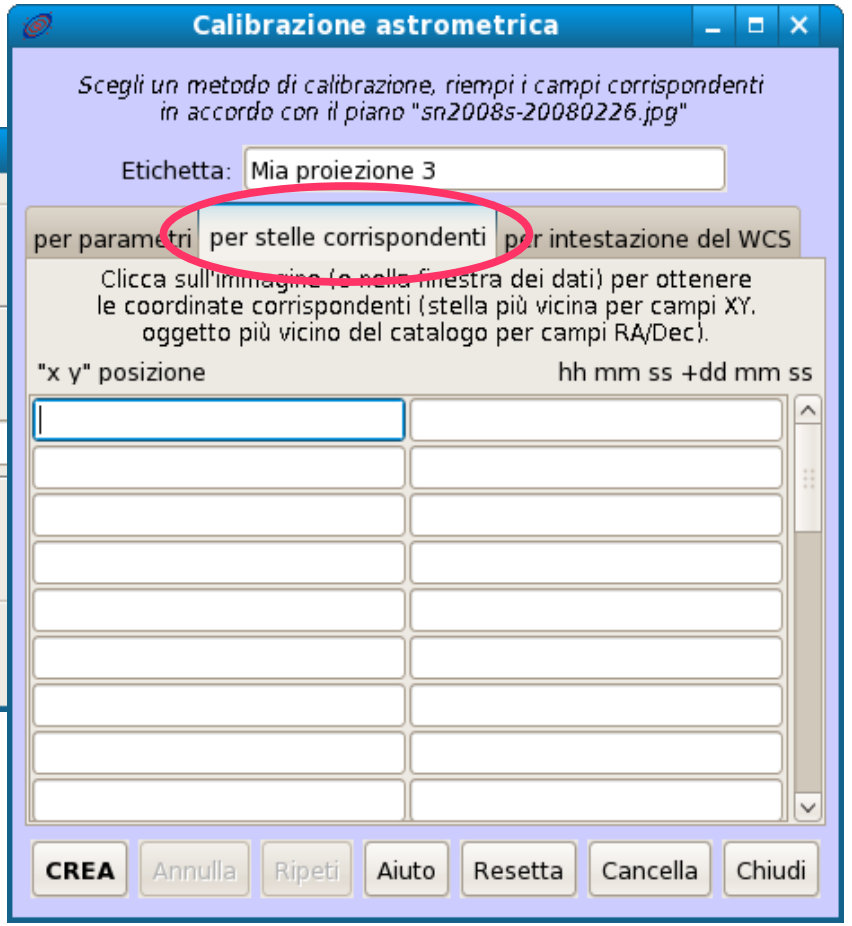
The 2 images and the catalog have been loaded in the Aladin planes

Display the properties of the plane with the image to calibrate (ngc6946.fits)



Astrometrical calibration

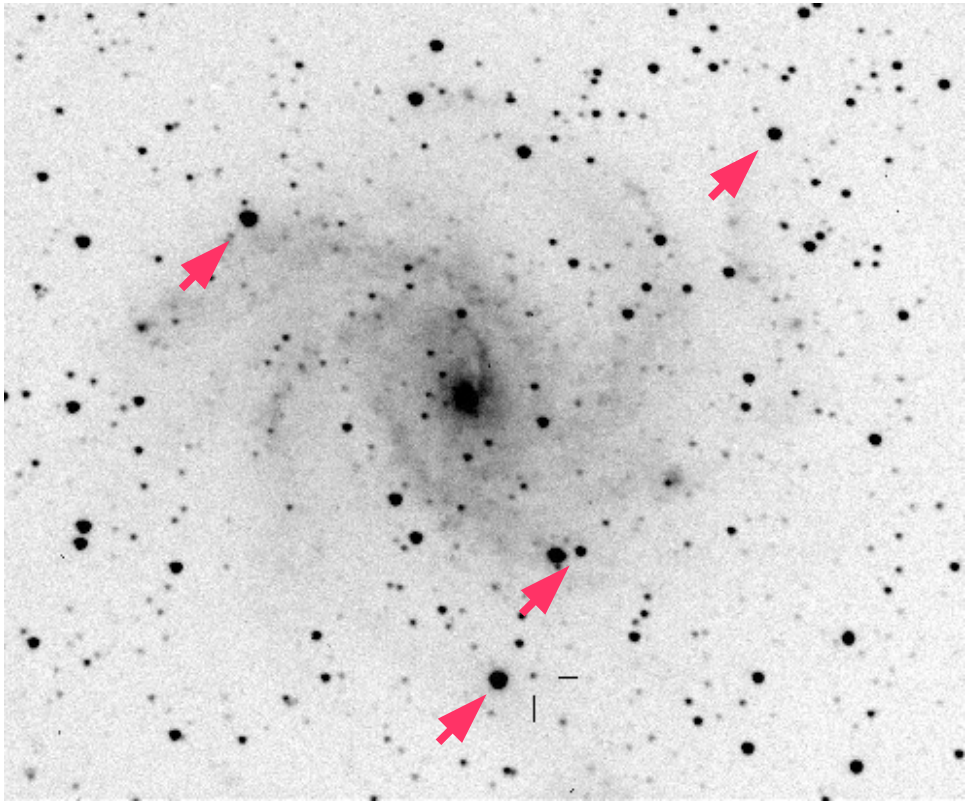
In the properties window select *astrometrical reduction --> new --> by matching stars*



Astrometrical calibration

Insert in the left column the coordinates (x, y) of 3 or 4 stars of the uncalibrated image (ngc6946.fits), by clicking them

Insert in the right column the coordinates (RA, dec) of the same stars of the calibrated image (POSS II), by clicking them

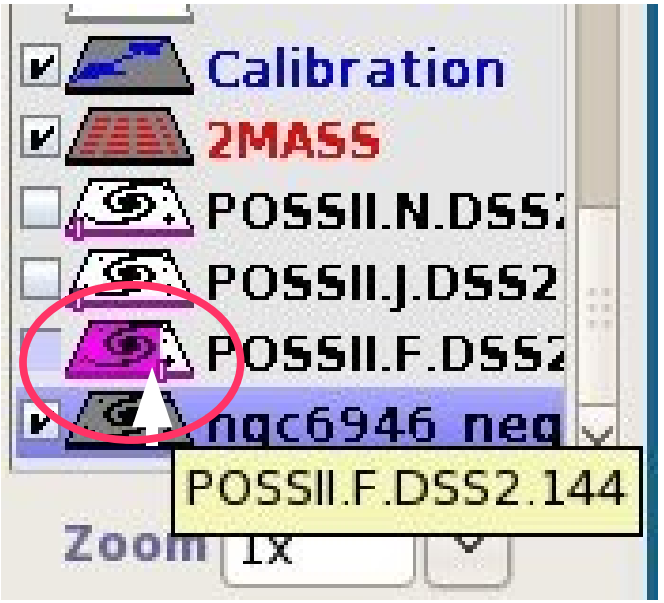


Comparison with POSS red

Now your image is calibrated, you can compare it with the POSS red one

Select the plane ngc6946.fits, go to the icon of the plane POSS II red and modify its trasparency level to show both images overlaid

Notice that the supernova doesn't appear in the POSS red image



Comparison with POSS red

ALTERNATIVE PROCEDURE FOR IMAGE COMPARISON:

You can create an animation (blink)

Click the button “*assoc*” and select the 2 images to compare

If necessary modify the stretch of the 2 images with the button “*pixel*”

Comparison with POSS blue and IR

Load the images POSS blue and IR

Repeat the procedure of the previous pages to compare them

Note that the supernova doesn't appear in these images either

Coordinates of the supernova

Click on the supernova (in the plane sn2008s)

In the field "*command*" are displayed the coordinates of the supernova [20:34:45.45 +60:05:56.5]

The offset from the nucleus of ngc6946 can be computed from the coordinates or by drawing a distance vector (button "*dist*")

Dist = 3.31' (RA=51.898"/6.95 s. DE=3.2') PA = 195.2 deg)

offset

Supernovae in ngc6946

Load the SIMBAD astronomical database

In the field “*display filter*” select -no filter-

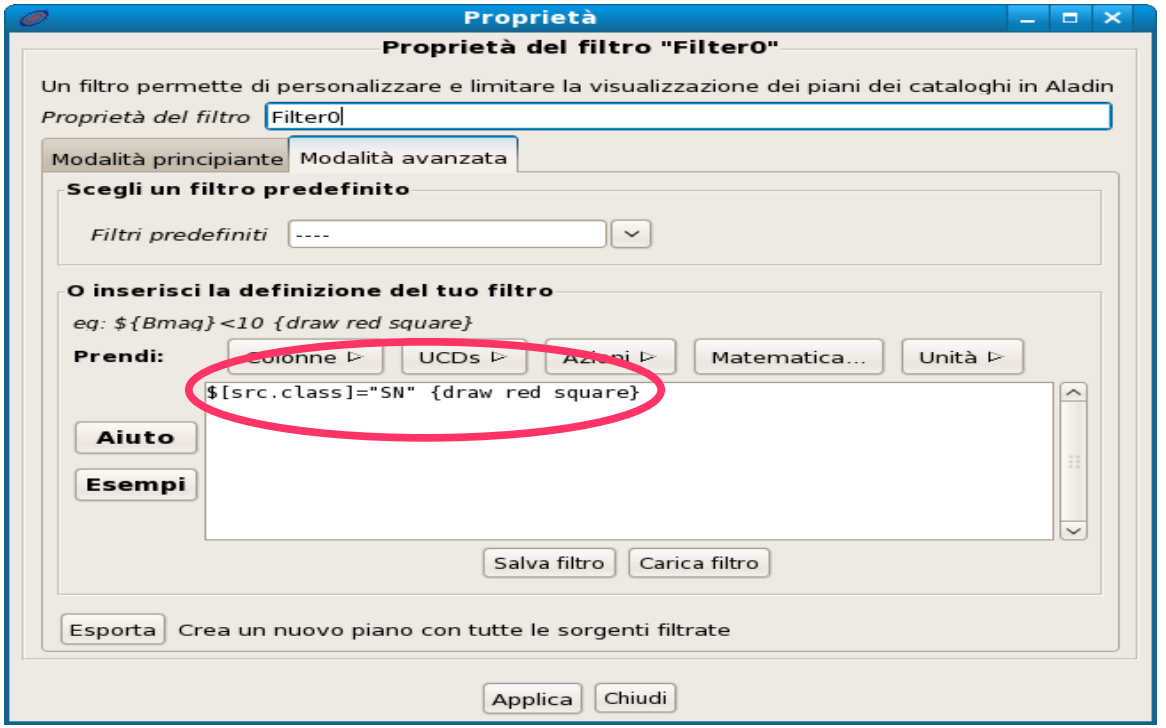
Supernovae in ngc6946

Click the button “*filter*” and switch to the window “*advanced mode*”

Write the following string in the box:

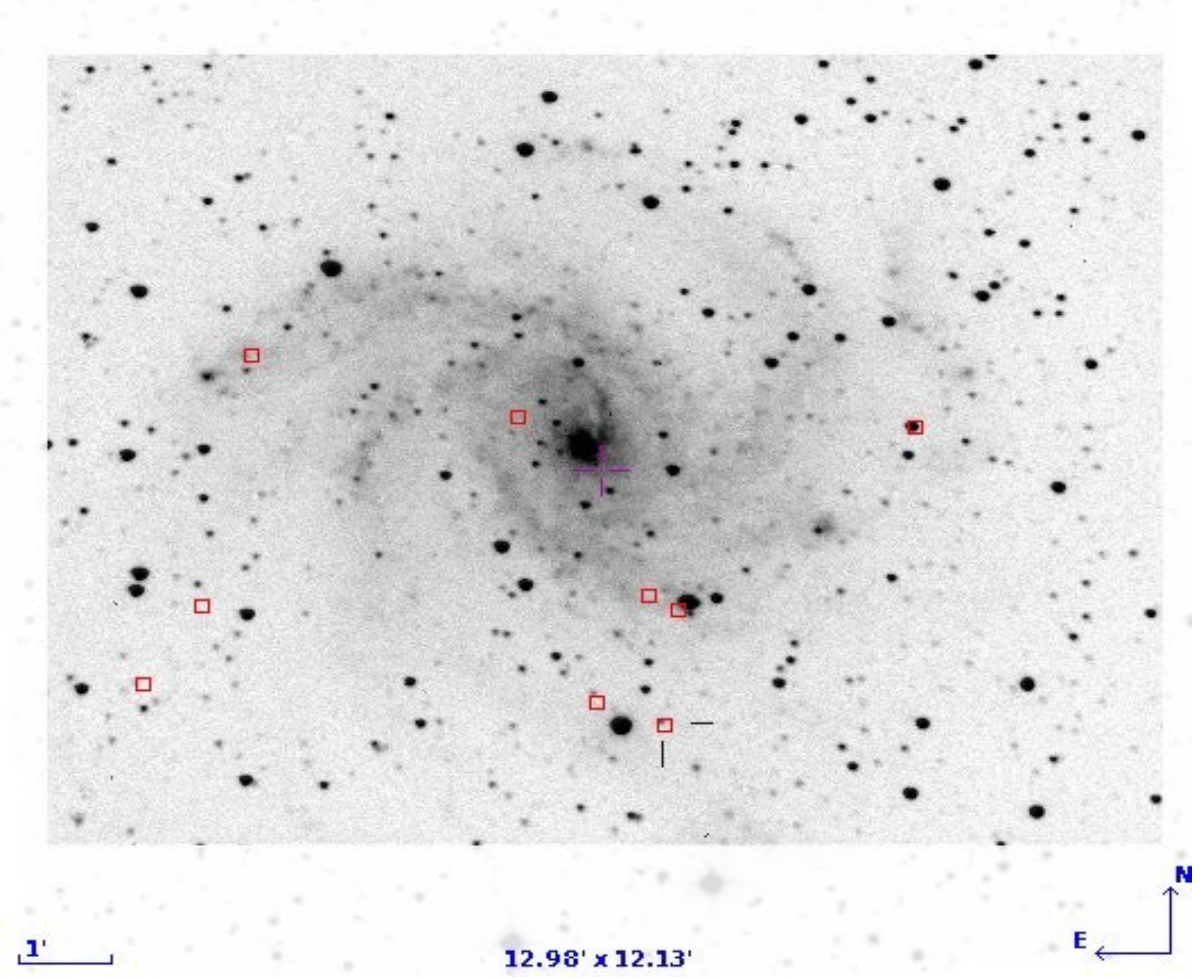
$[src.class]=”SN” {draw red square}

Click “*apply*”



Supernovae in ngc6946

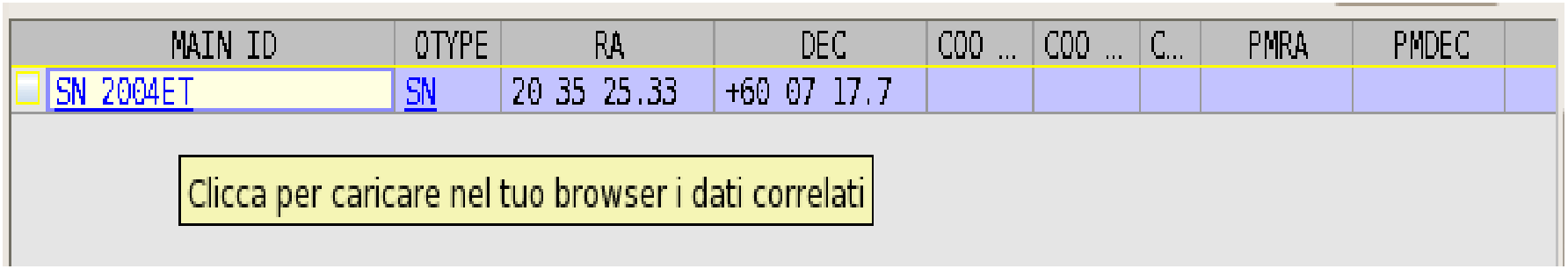
The 9 supernovae in the galaxy ngc6946 are displayed in the filter plane (red squares)



Supernovae in ngc6946

If you select a supernova its data appear in the measurement window

If you click on its name you open a window in your web browser with the SIMBAD page of the supernova (with information, references, etc.)



Save your work

File --> *Save*...

options:

- *Export Planes*, e.g. the plane of the original image with the astrometrical calibration
- Stack *Backup*, save all the planes, included data, catalogs and images in an Aladin file, in order to continue your work later (possibly offline)