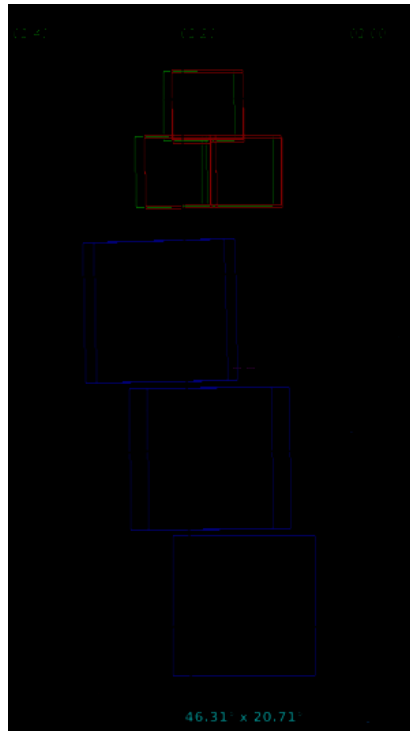
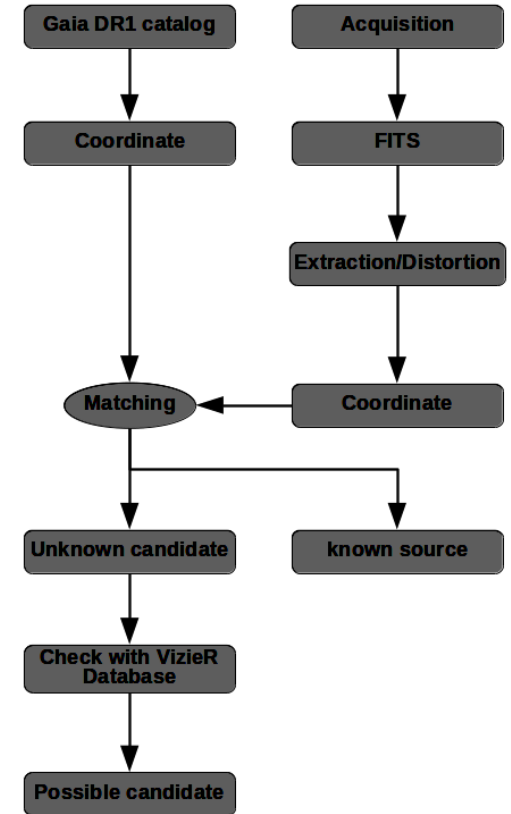
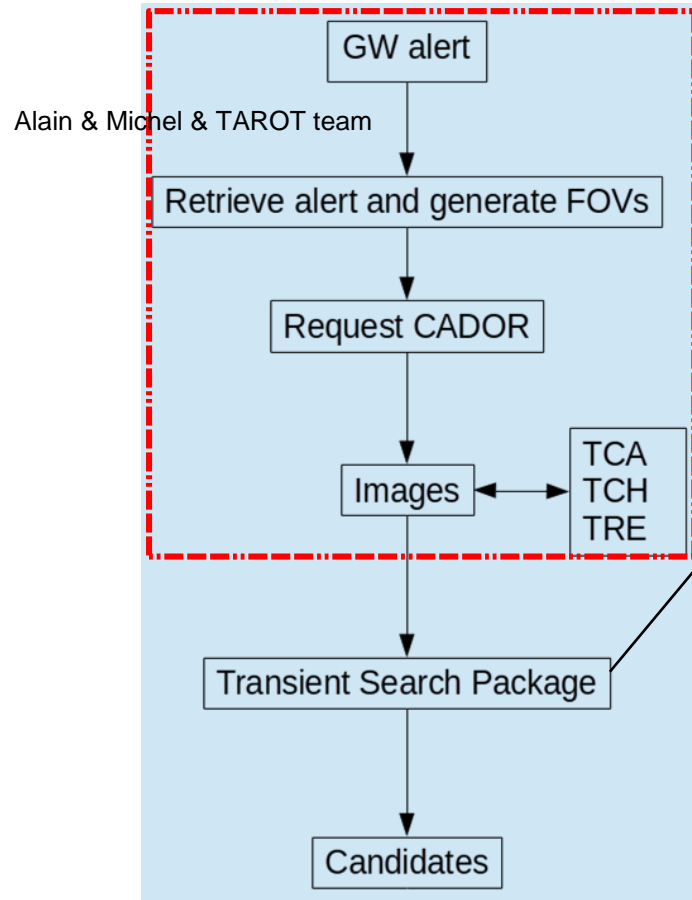


Optical detection pipeline: TAROT

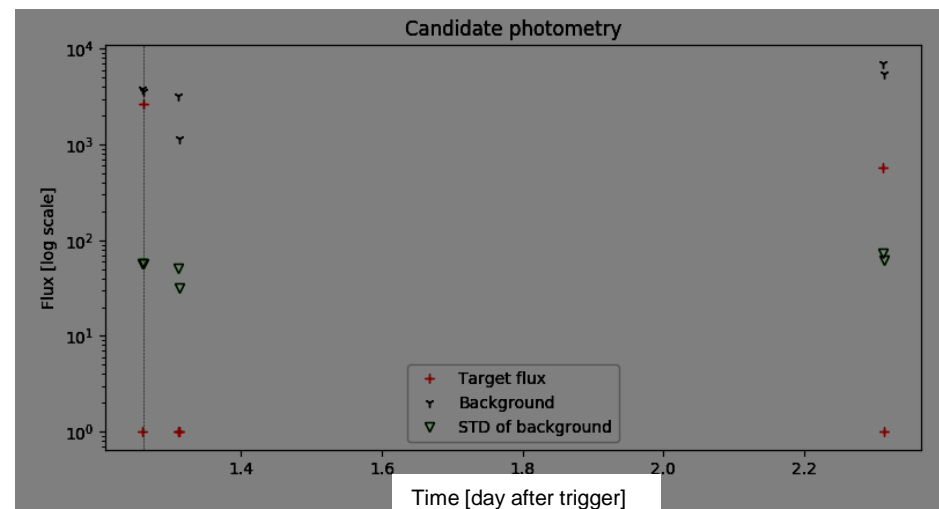
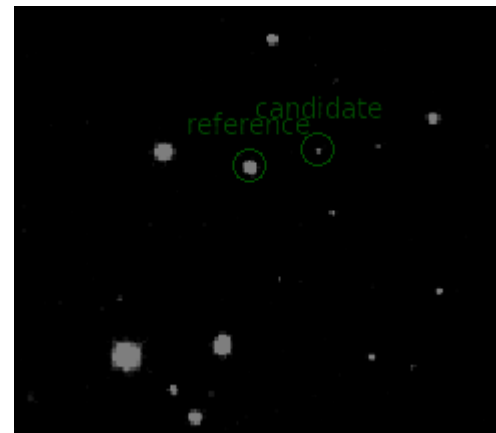
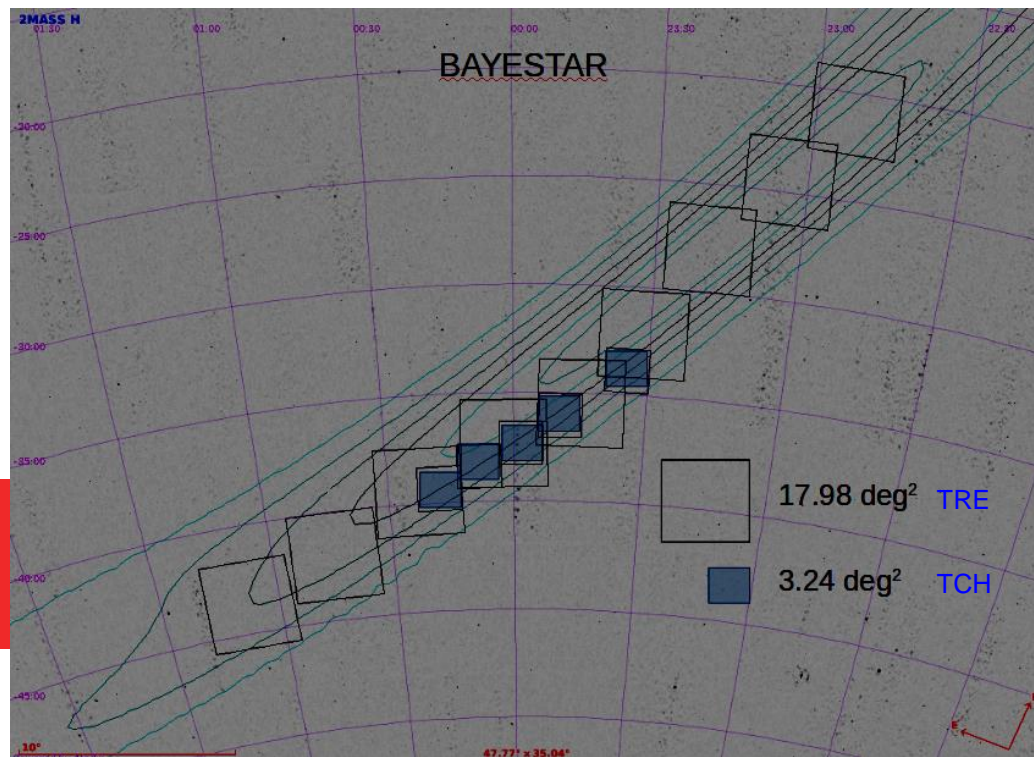


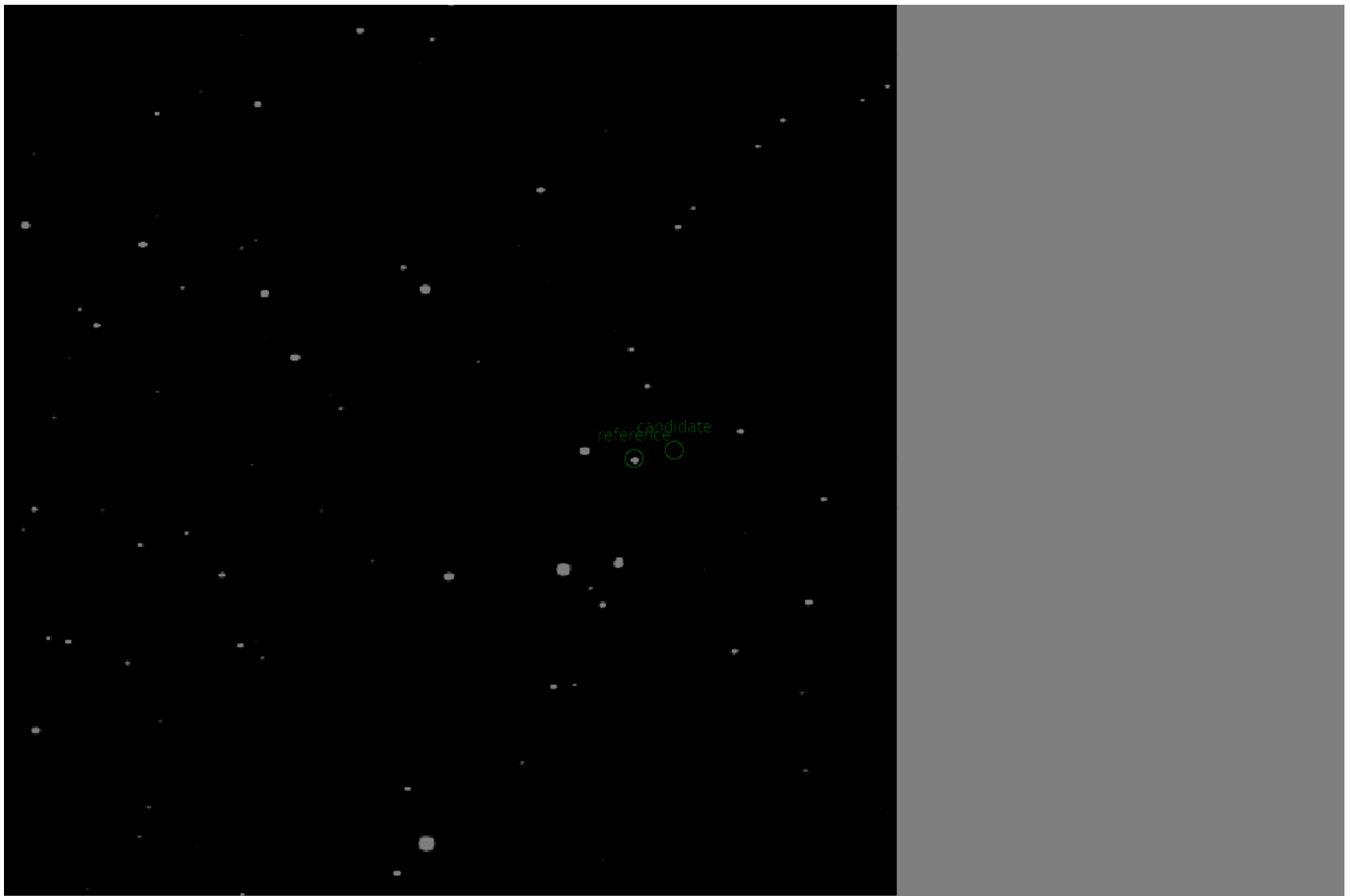
FOVs by TAROT



Transient search diagram

TAROT's footprints over localization of GW170104



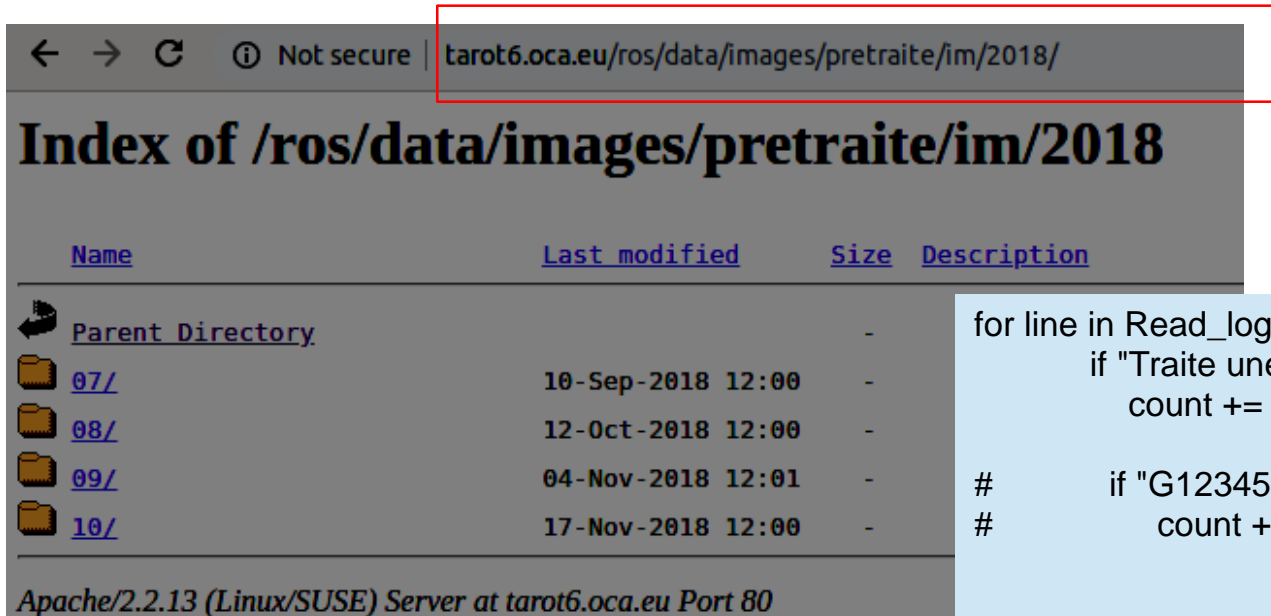


3.5e+03 3.7e+03 3.9e+03 4.1e+03 4.3e+03 4.5e+03 4.7e+03 5e+03 5.2e+03



Pipeline & Data Analysis

Retrieving images from TAROT logs



The screenshot shows a web browser window with the address bar containing `tarot6.oca.eu/ros/data/images/pretraite/im/2018/`. The page title is "Index of /ros/data/images/pretraite/im/2018". Below the title is a table with columns: Name, Last modified, Size, and Description. The table lists a "Parent Directory" and four subdirectories: 07/, 08/, 09/, and 10/. At the bottom of the page, it says "Apache/2.2.13 (Linux/SUSE) Server at tarot6.oca.eu Port 80".

Name	Last modified	Size	Description
Parent Directory	-	-	-
07/	10-Sep-2018 12:00	-	-
08/	12-Oct-2018 12:00	-	-
09/	04-Nov-2018 12:01	-	-
10/	17-Nov-2018 12:00	-	-

Apache/2.2.13 (Linux/SUSE) Server at tarot6.oca.eu Port 80

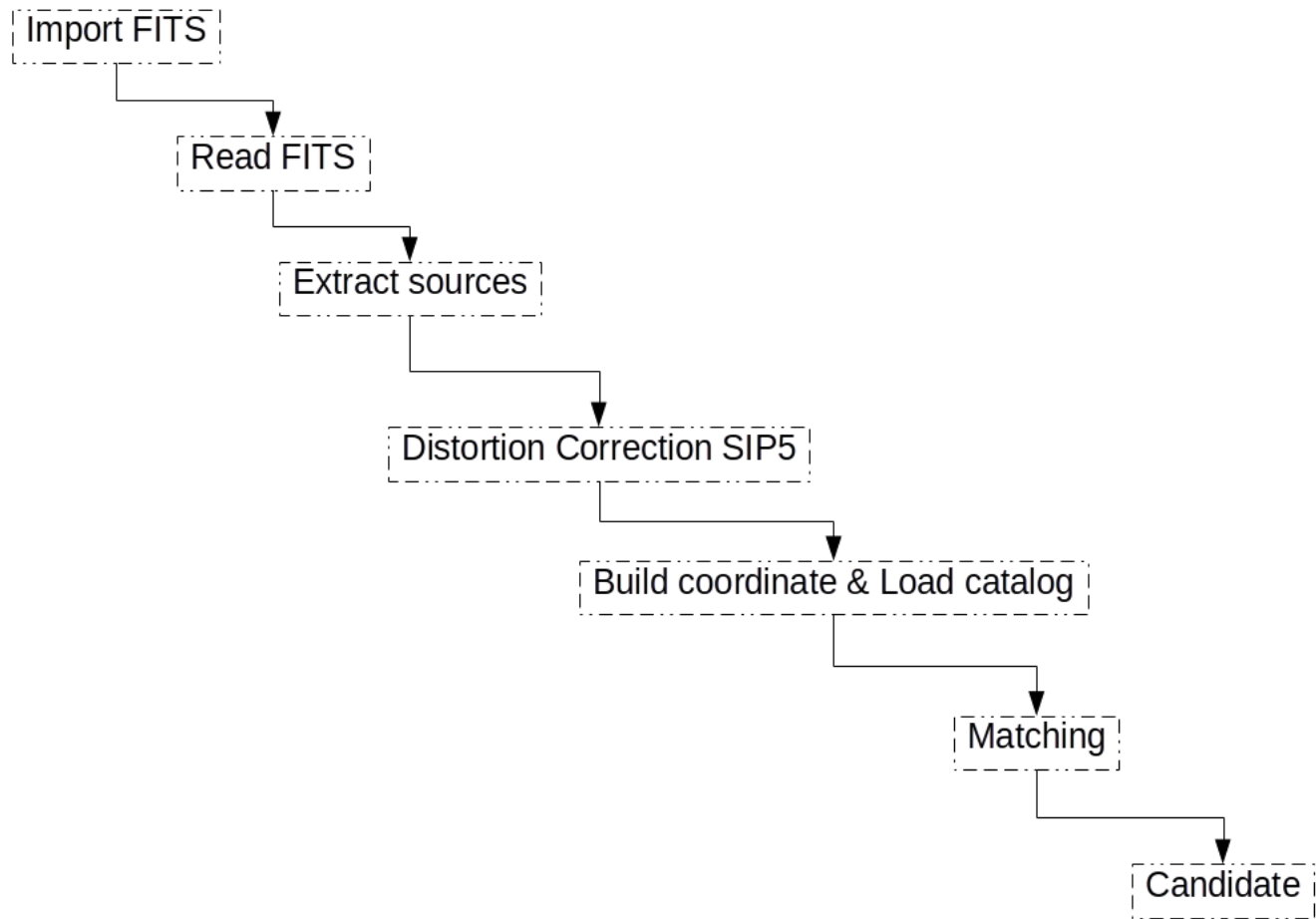
```
for line in Read_log:
    if "Traite une alerte" in line:
        count += 1
#
# if "G123456" in line: #Extra param can be add here
#     count += 1
```

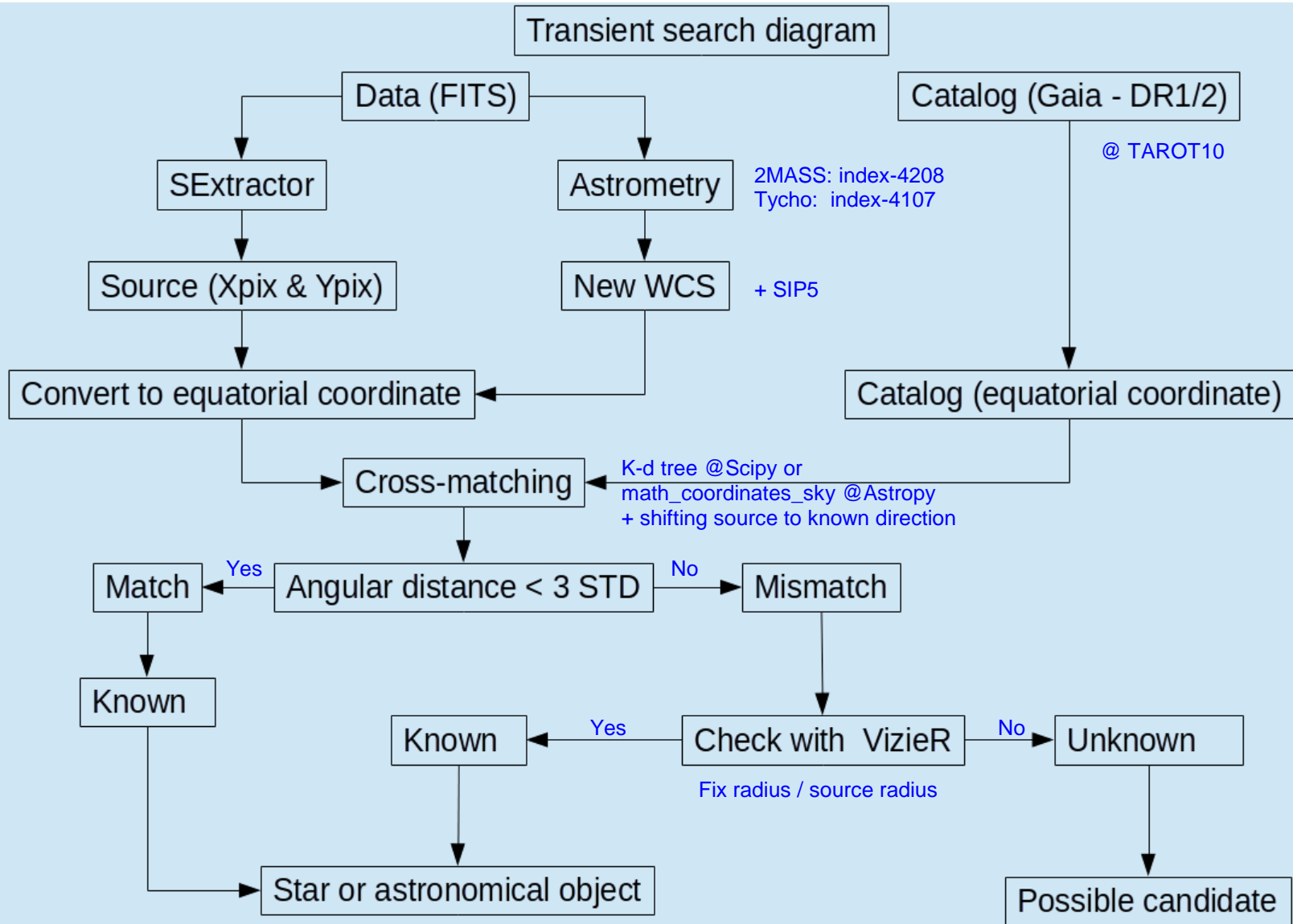
TCA: <http://tarot6.oca.eu/ros/logs/grenouille/>

TCH: <http://tarotchili5.osupytheas.fr/ros/logs/grenouille/>

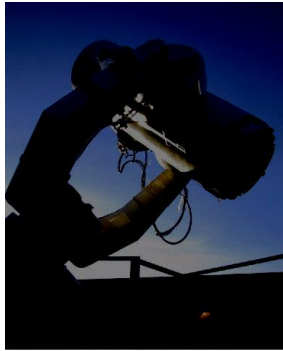
TRE: <http://lesmakes.dlinkddns.com:8081/ros/logs/grenouille/>

Step:





Télescope à Action Rapide pour les Objets Transit (TAROT)



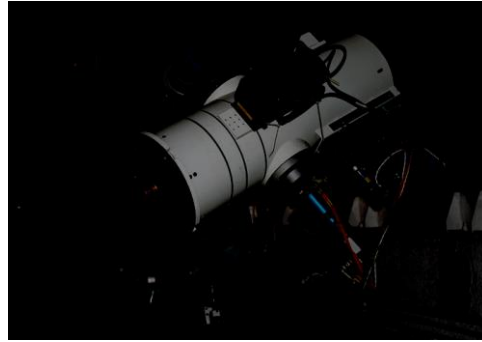
Site: Calern Observatory
France (TCA)

Field of view 1.8 deg

Diameter: 25 cm.

F-ratio: f/3.2

Limit. Mag: 17



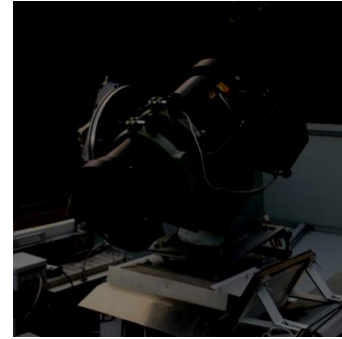
La Silla ESO observatory
Chile (TCH)

25 cm.

1.8 deg

f/3.2

18



La Réunion island
France (TRE)

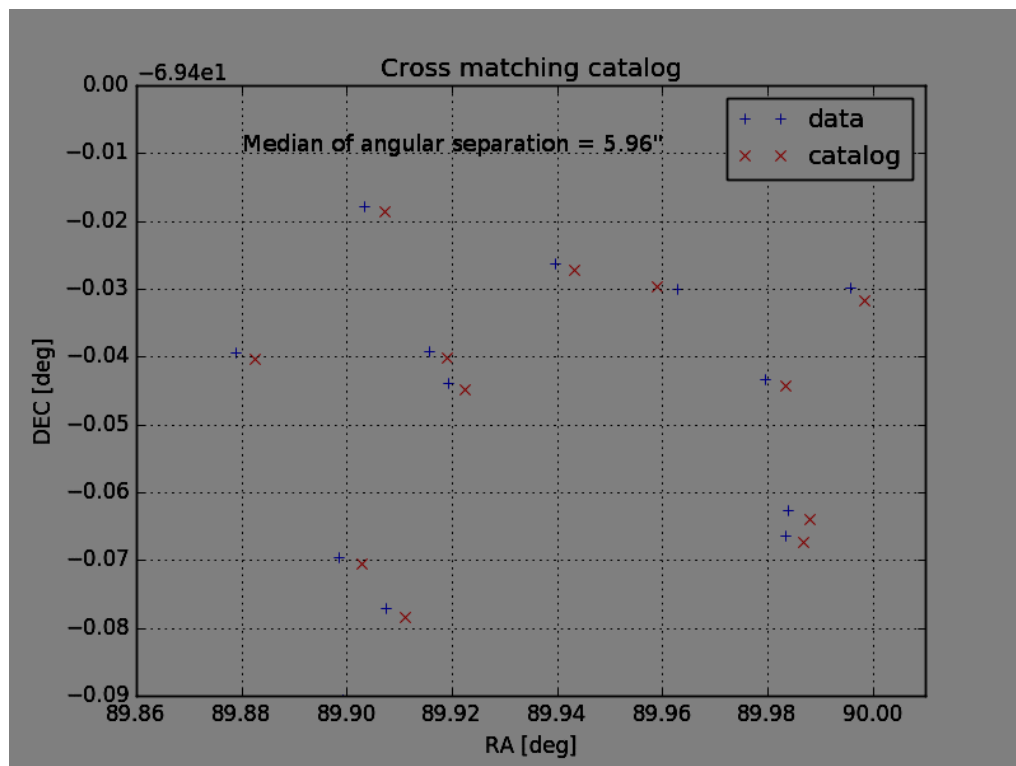
4.2 deg

18 cm.

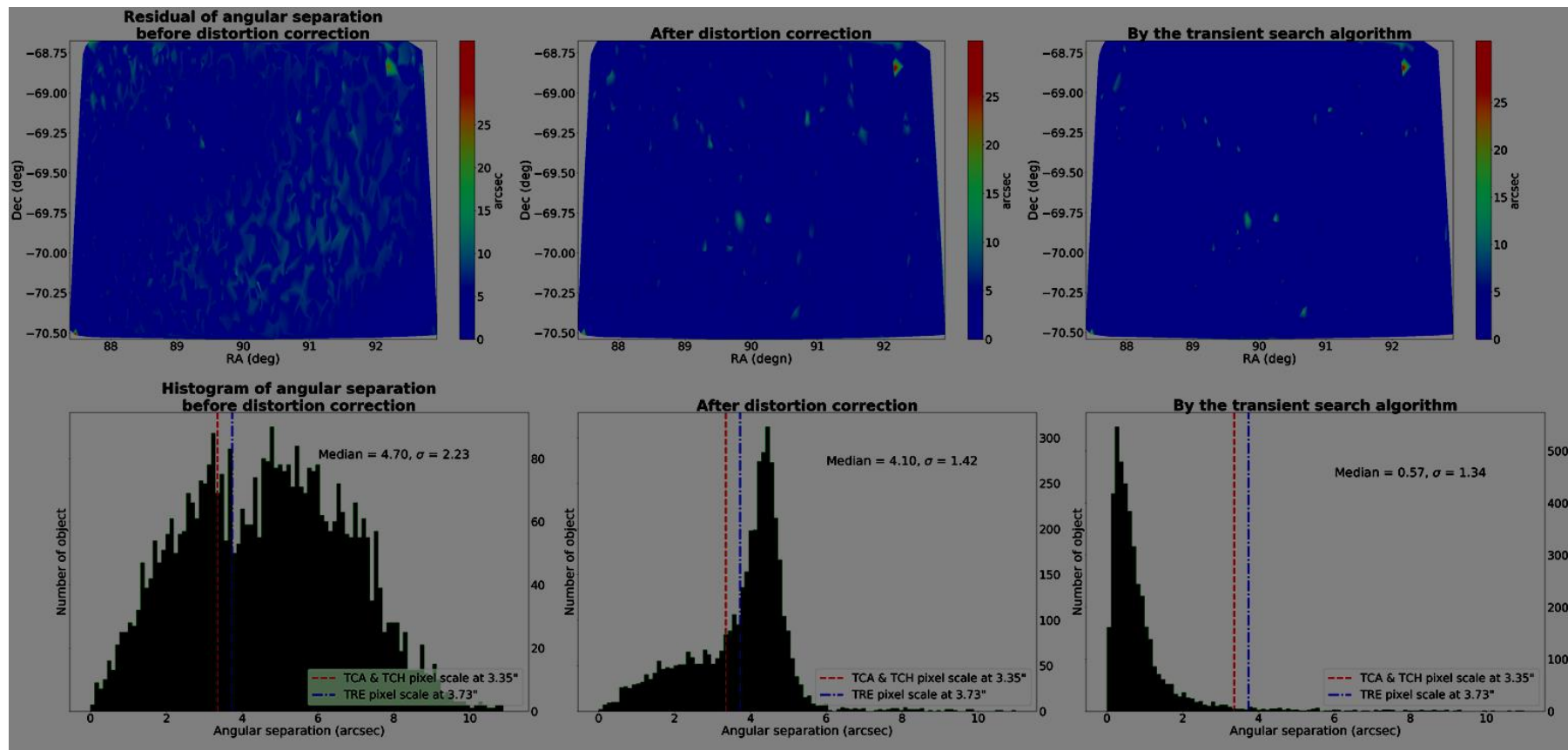
f/3.2

*Limiting magnitude is in Rmag with a minute exposure.

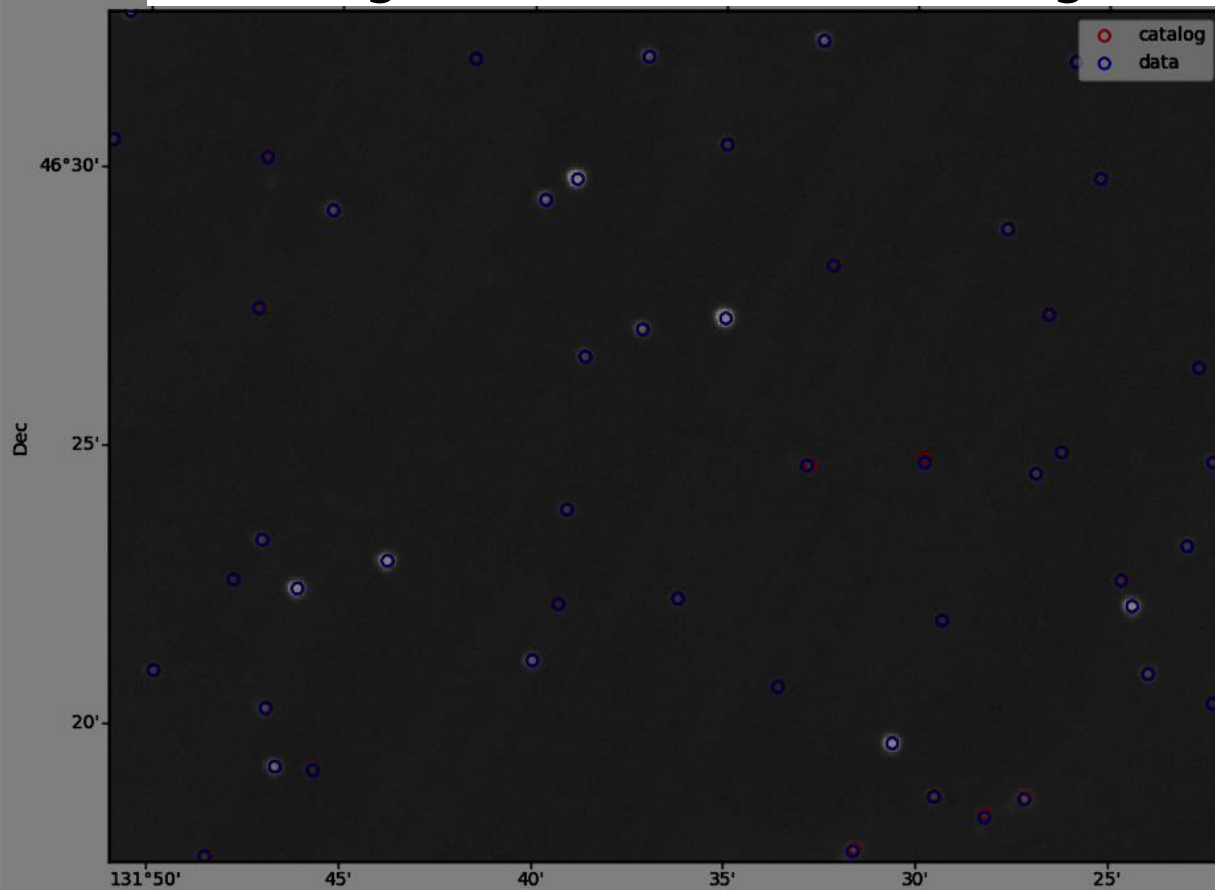
Matching & Transient search algorithm



Transient search algorithm



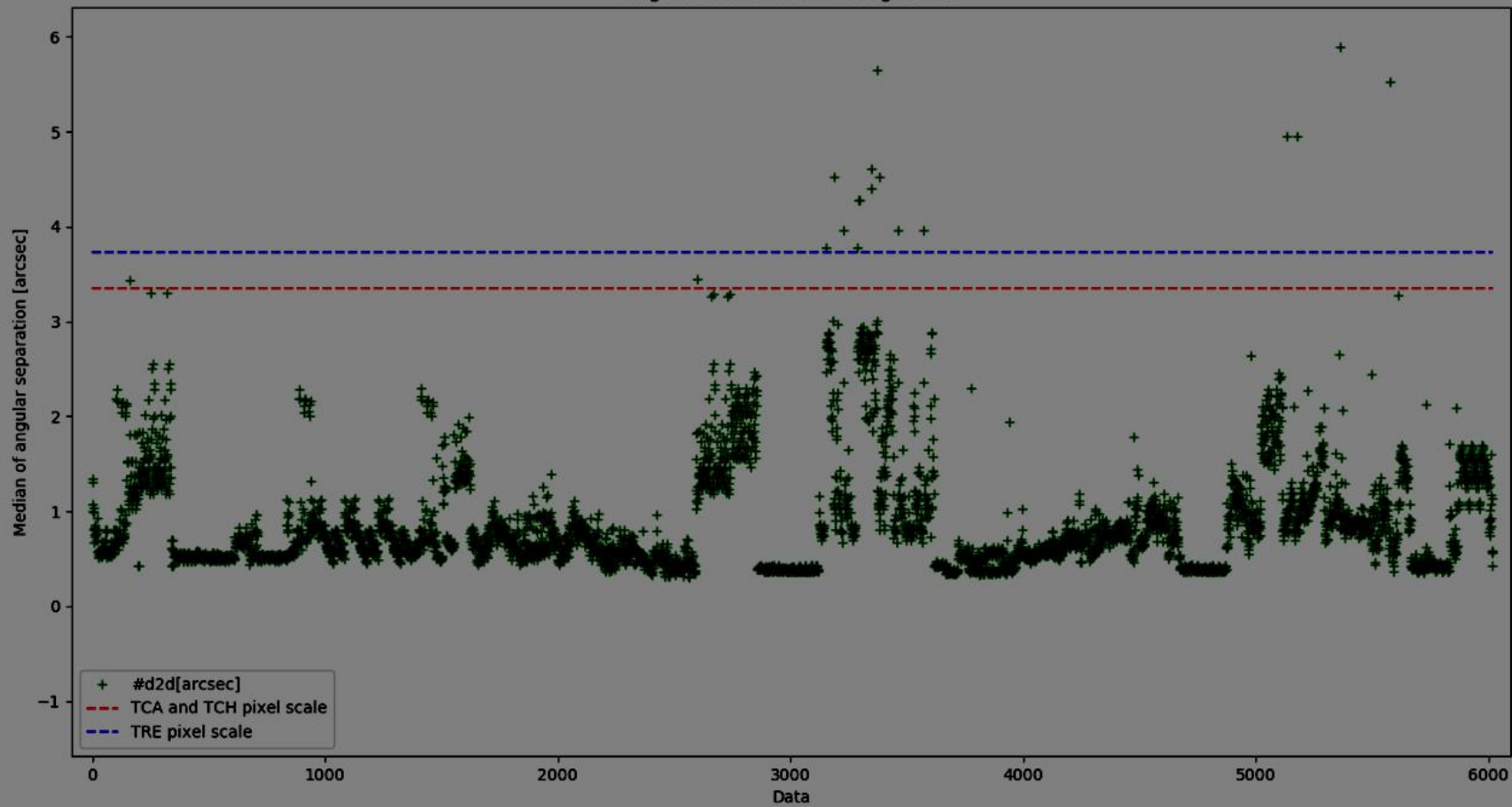
Matching between data and catalog



Dec (deg)

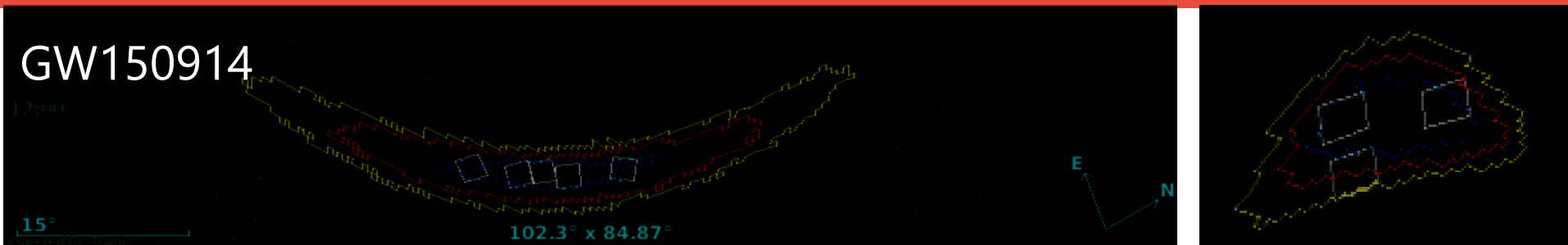
RA (deg)

Log of Transient Search Algorithm

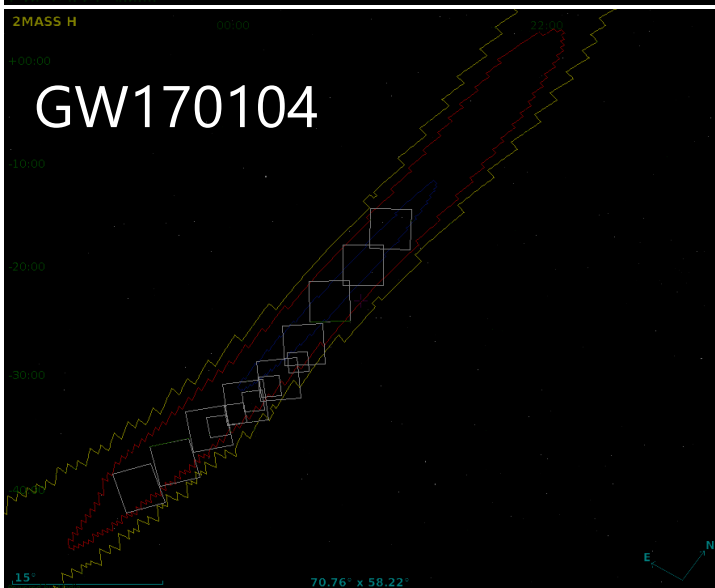


Transient source search within 3 GW events

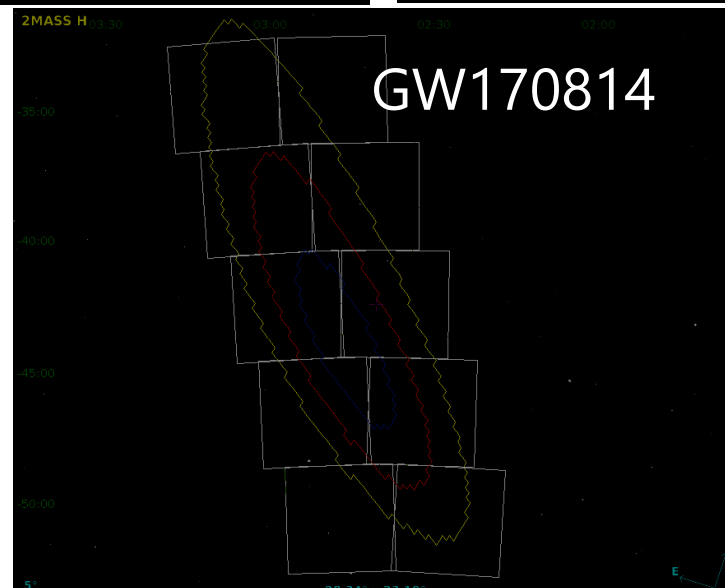
GW150914



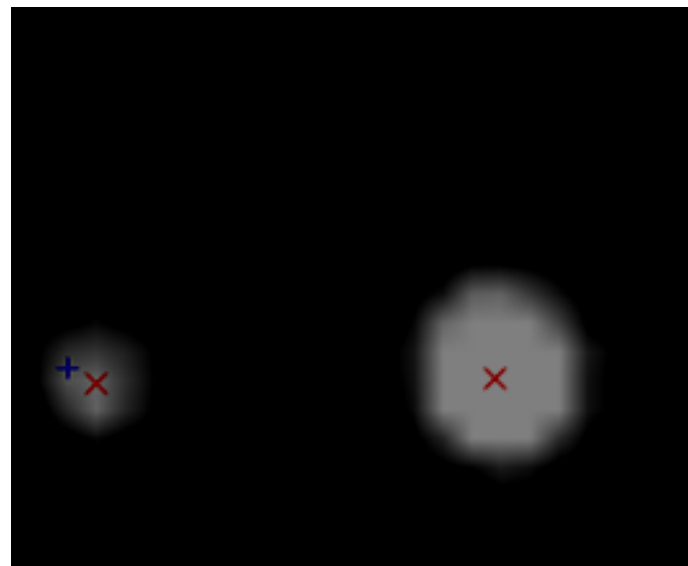
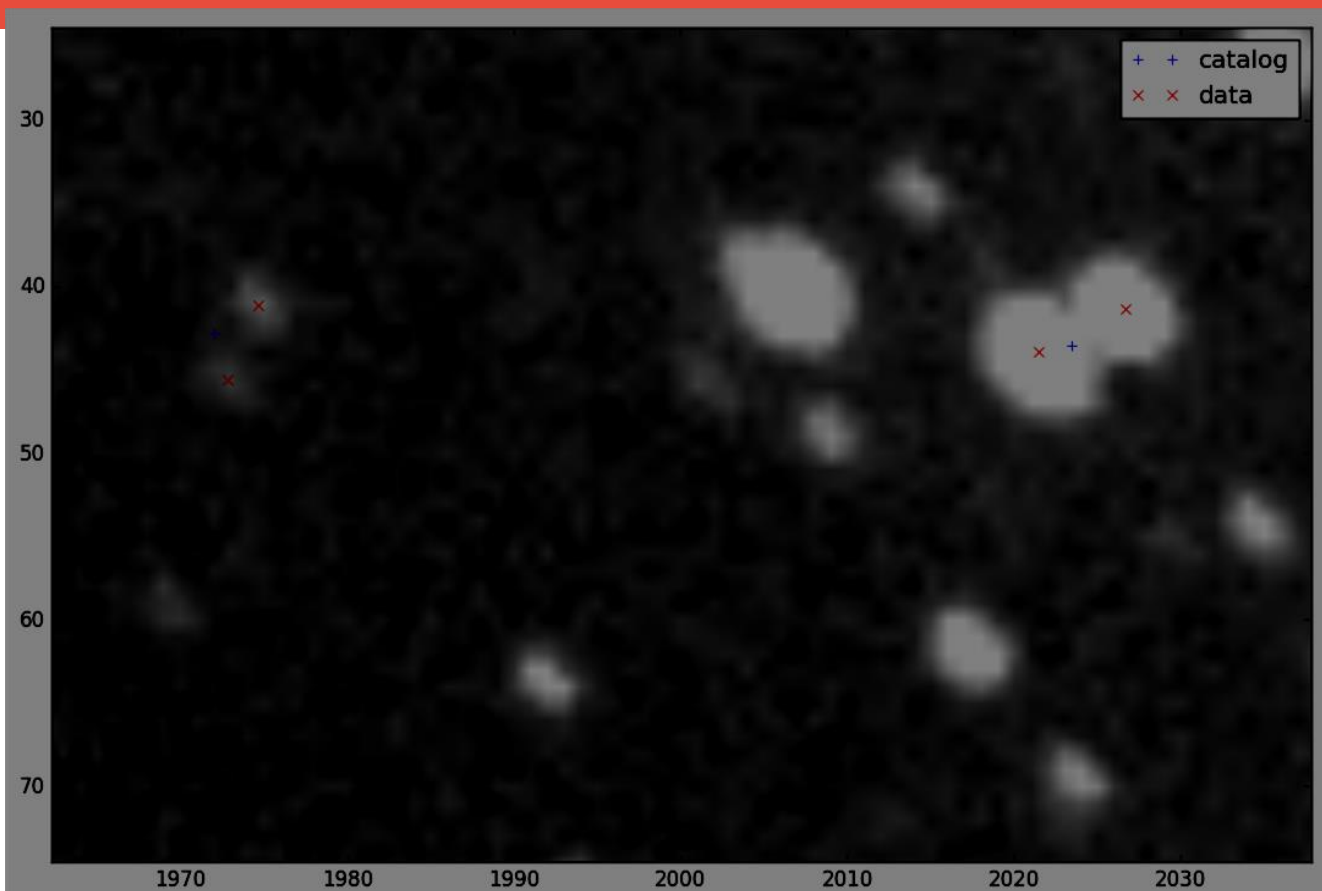
GW170104



GW170814

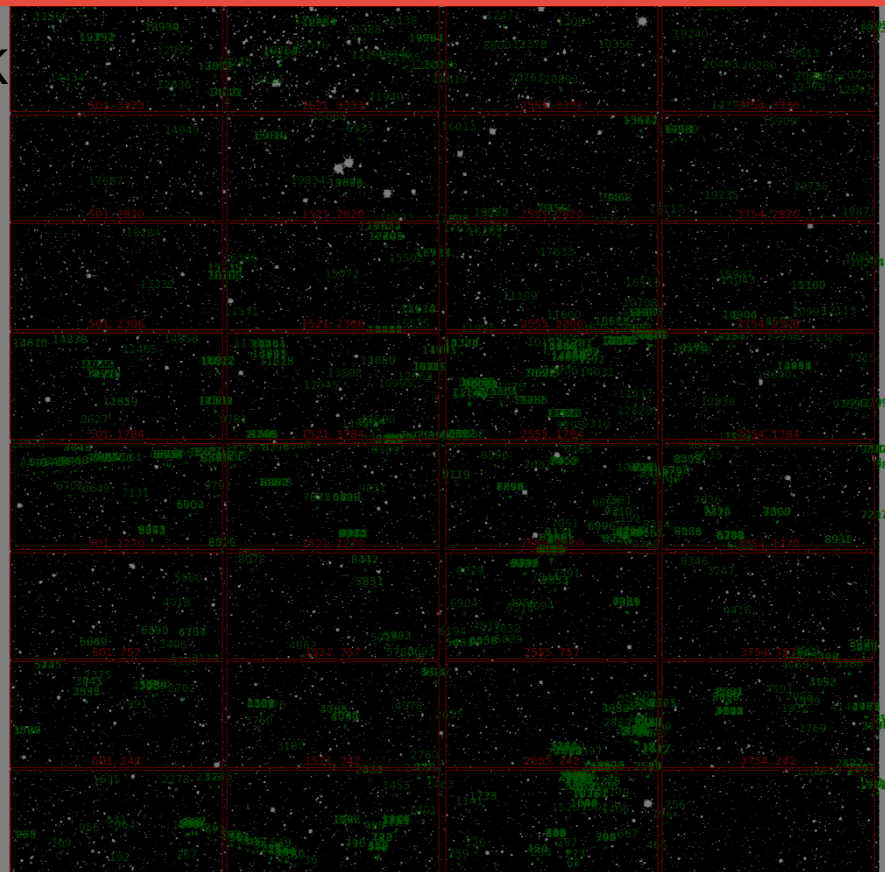


Problem to deal with: Duplication

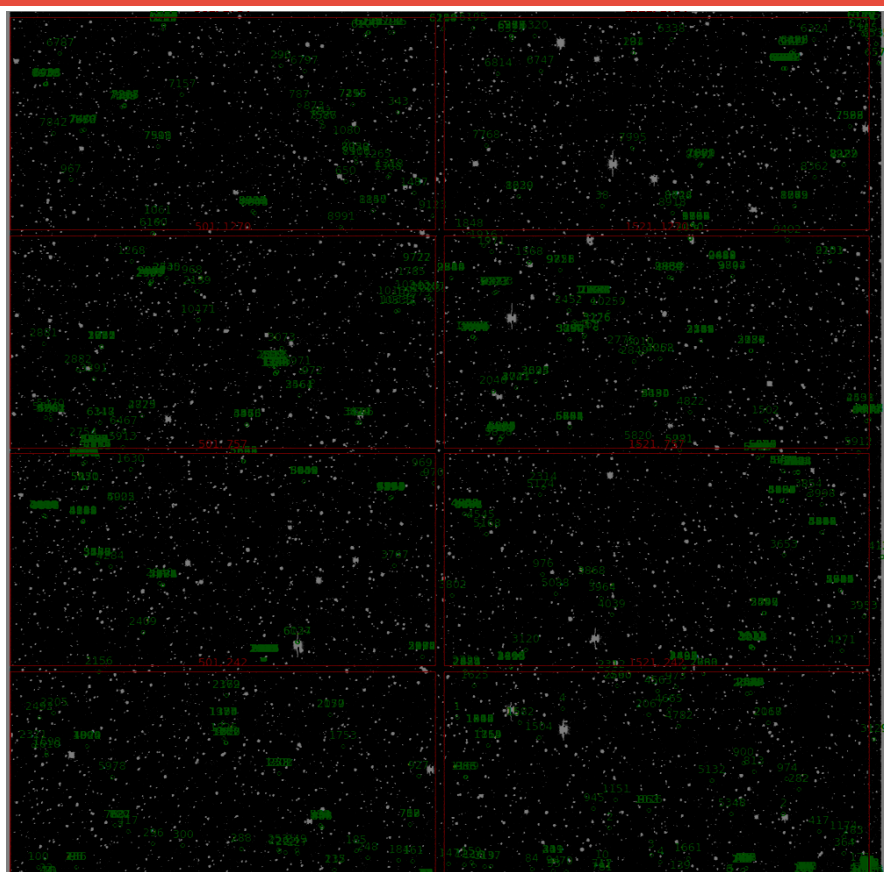


Problem to deal with: Too many

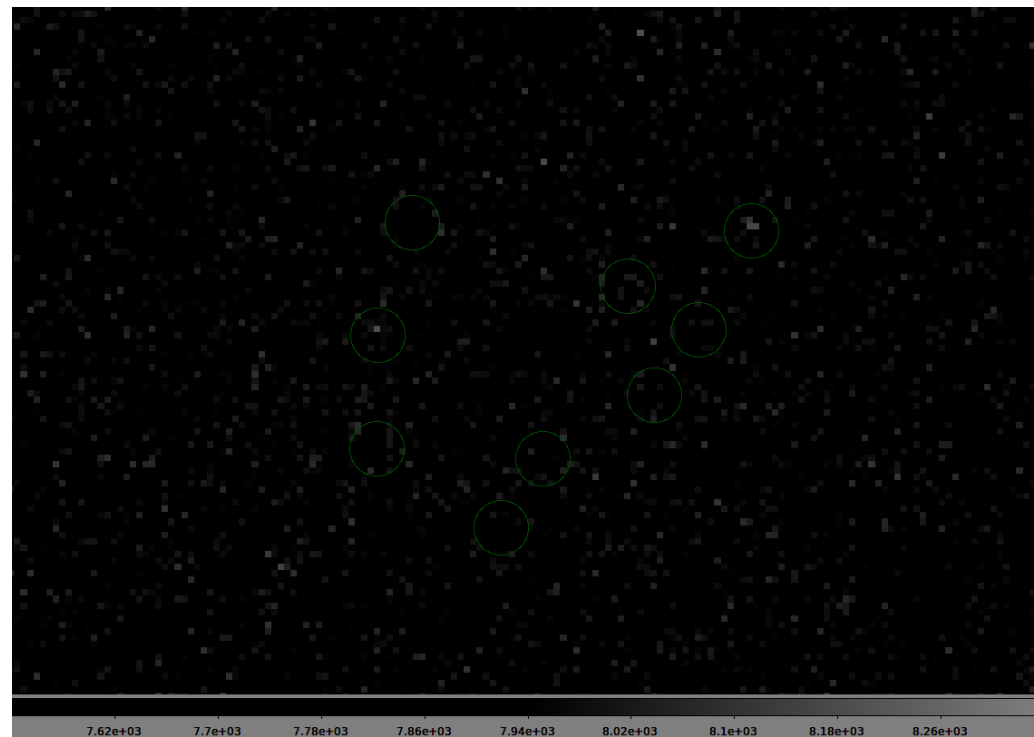
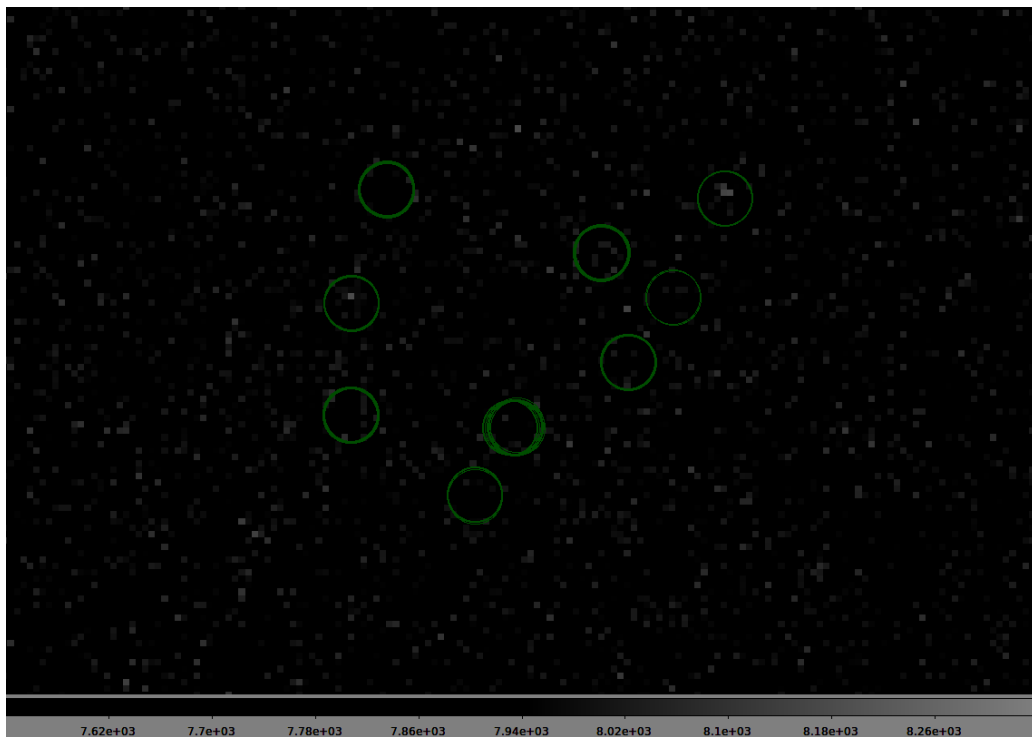
4K



2K



Problem to deal with: Too much



But promising some candidates

Table 2. Candidates from gravitational wave events. All these candidates were excluded after human examination and were classified as cosmic like.

GW event	Observation delay After trigger(day)	RA (<i>J</i> 2000) (h:m:s)	Dec (<i>J</i> 2000) (d:m:s)	Mag (Rmag)	Limit Mag (Rmag)	α (10^{-5})
GW150914	2.836	07 : 24 : 21.00	-68 : 59 : 05.90	15.83 ± 0.02	17.17	1.35
LV trigger: G184098	2.857	07 : 33 : 06.29	-70 : 24 : 57.80	13.98 ± 0.01	17.17	7.46
2015-09-14 09:50:45	2.877	07 : 33 : 47.07	-69 : 31 : 16.10	14.09 ± 0.01	16.70	6.78
$\Delta E = 3.0M_{\odot}$	2.898	07 : 33 : 22.89	-70 : 27 : 40.10	14.67 ± 0.03	16.86	4.00
	2.989	07 : 33 : 45.71	-69 : 33 : 21.10	12.04 ± 0.01	17.08	46.55
	2.947	07 : 25 : 16.73	-68 : 50 : 05.30	15.35 ± 0.02	17.32	2.18
	9.930	07 : 34 : 56.33	-70 : 03 : 24.70	15.03 ± 0.01	16.77	9.85
GW170104	1.261	23 : 52 : 17.83	-37 : 52 : 45.08	16.23 ± 0.09	17.67	2.86
LV trigger: G268556	2.253	23 : 09 : 18.14	-26 : 36 : 52.50	15.26 ± 0.04	16.69	7.32
2017-01-04 10:11:59	2.270	00 : 58 : 21.95	+45 : 30 : 20.36	15.84 ± 0.04	18.10	12.35
$\Delta E = 2.0M_{\odot}$						
GW170814	0.522	02 : 41 : 02.41	-49 : 42 : 41.28	17.27 ± 0.04	18.65	0.13
LV trigger: G297595	0.522	02 : 40 : 46.12	-49 : 25 : 40.31	16.44 ± 0.02	17.29	0.27
2017-08-14 10:30:43	1.402	02 : 45 : 11.30	-49 : 21 : 27.00	15.85 ± 0.07	17.22	1.26
$\Delta E = 2.7M_{\odot}$						

But promising some candidates

