



Il lato italiano di ALMA



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(Italian node of the European ARC
INAF-IRA)



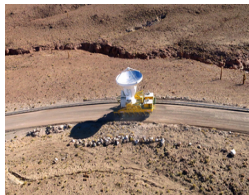
EUROPEAN ARC

ALMA Regional Centre || Italian



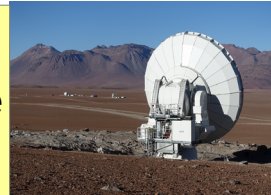


March
Inauguration
Ceremony



June
Final antenna
On site

September
Long Baseline
Campaign



Cycle 0
March: call EoI
June: deadline

Cycle 1
May: call
July: deadline

Cycle 2
Oct: call
Dec: deadline

Cycle 3
March: call
April: deadline

Cycle 4
March: call
April: deadline

Archive opens

ACA completed

B4 first light

First
Pipeline release

Polarization

Open to public visit

mmVLBI

2011

2012

2013

2014

2015

2016

October
First Science
Observations

A colorful image of a galaxy, likely M100, showing its spiral structure and central region.

January
Cycle 1 begins
Observations

A red-toned image of a galaxy, likely M100, showing its spiral structure.

June
Cycle 2 begins
Observations

A red-toned image of a galaxy, likely M100, showing its spiral structure.

June
Cycle 3 begins
Observations

A red-toned image of a galaxy, likely M100, showing its spiral structure.

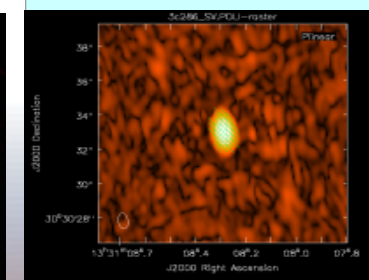
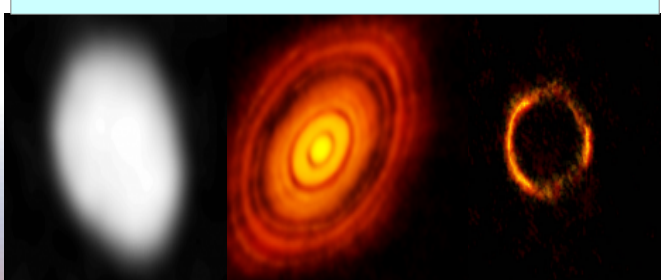
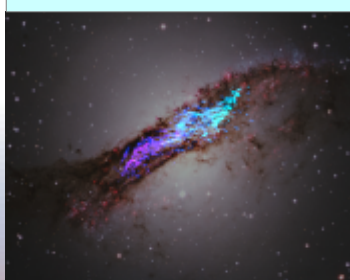
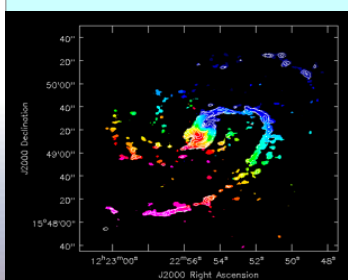
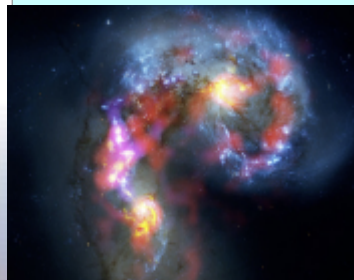
August
First SV Release
Antennae

February
SV Release
M100, SgrA*

April
3rd SV Release
CenA

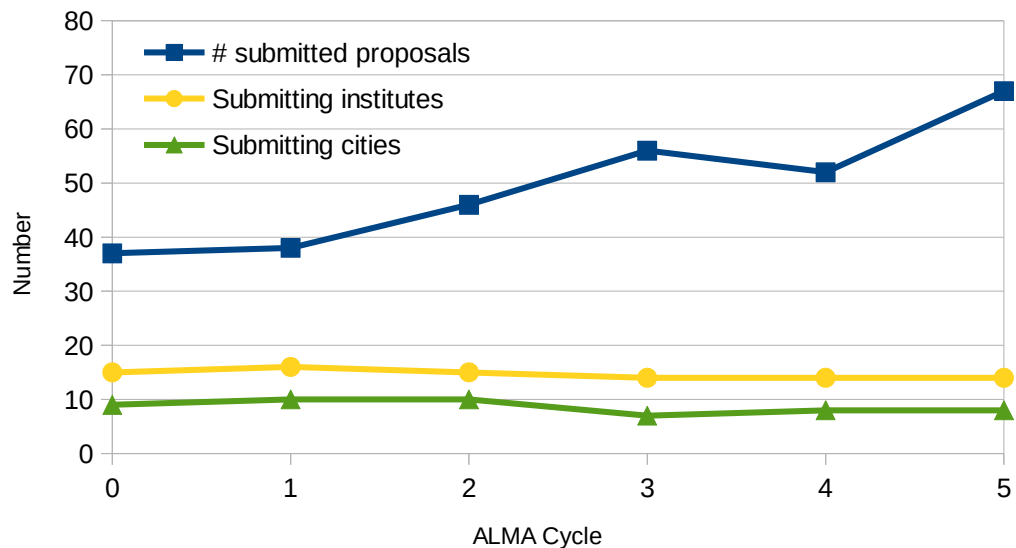
February
5th SV Release
CenA

July
6th SV Release
M100, 3C286

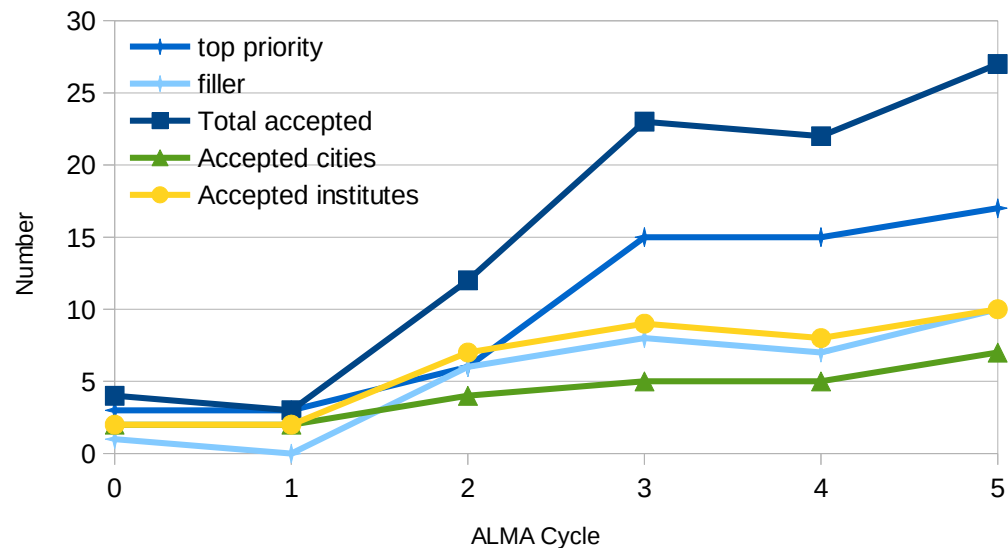


ALMA Italian Success Rate

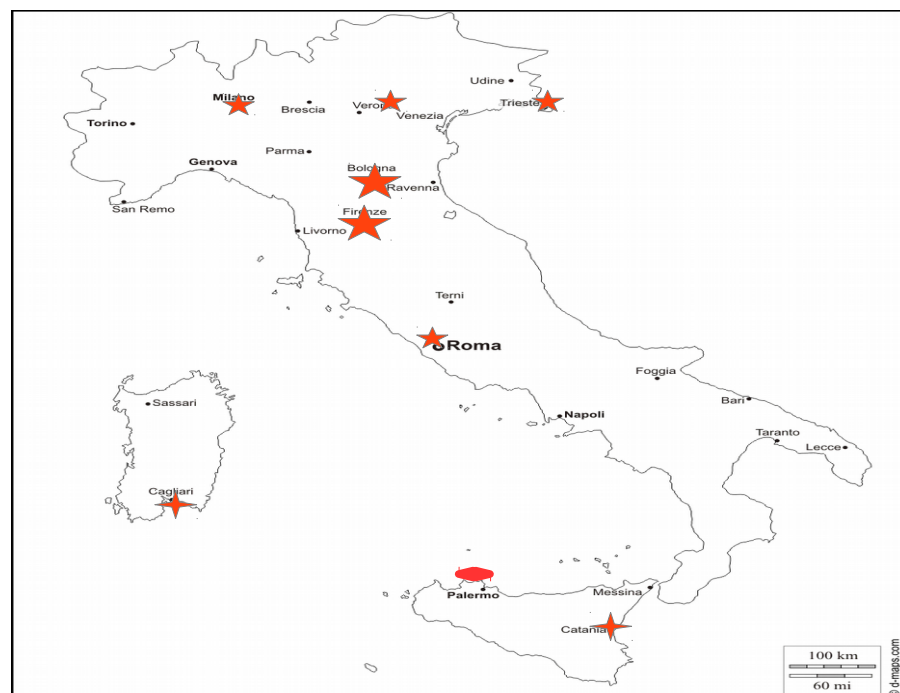
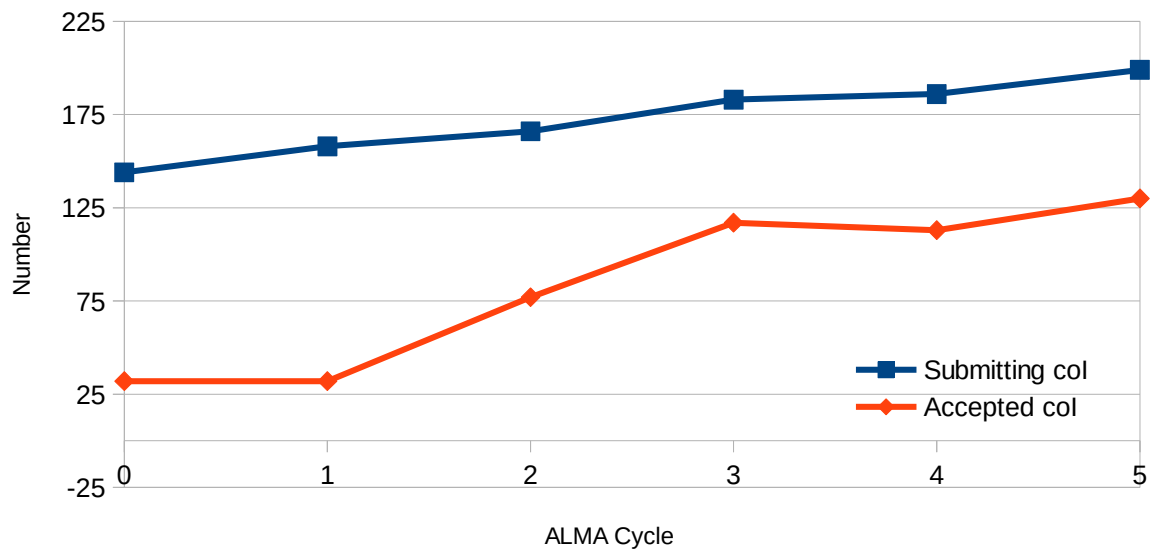
Submitted proposals



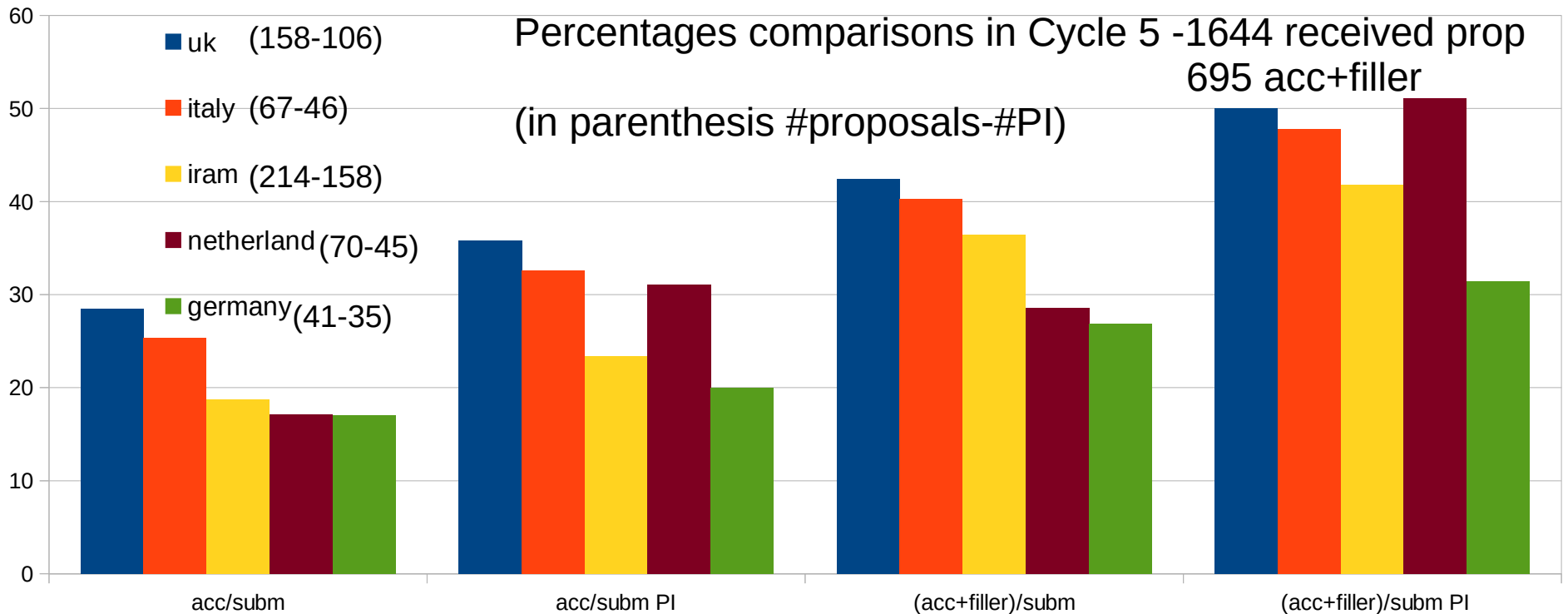
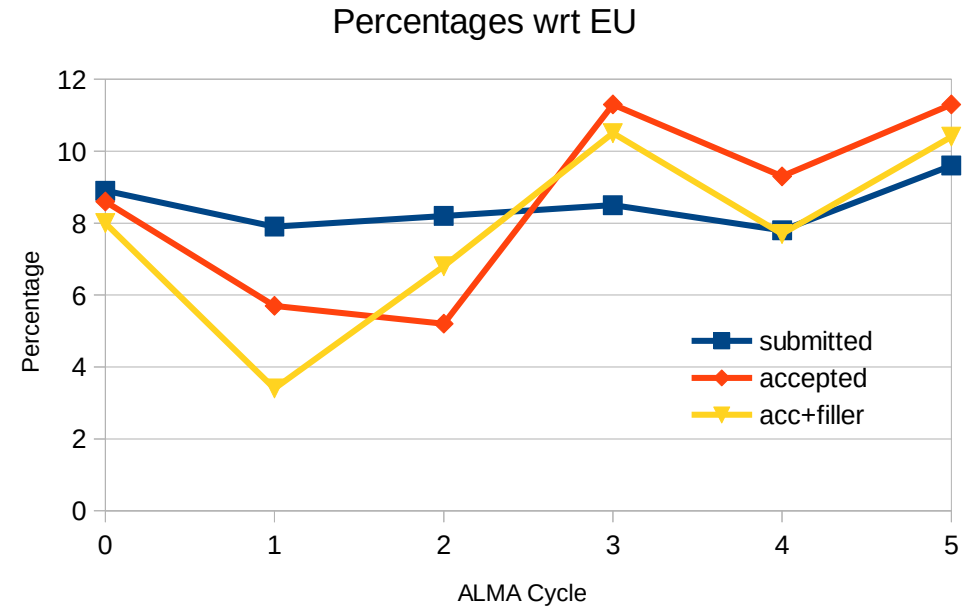
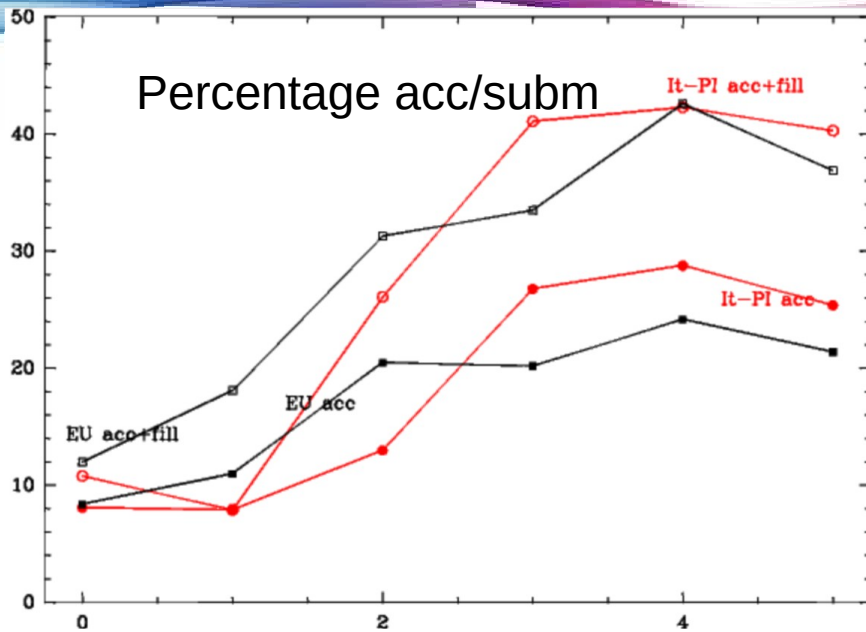
Accepted proposals



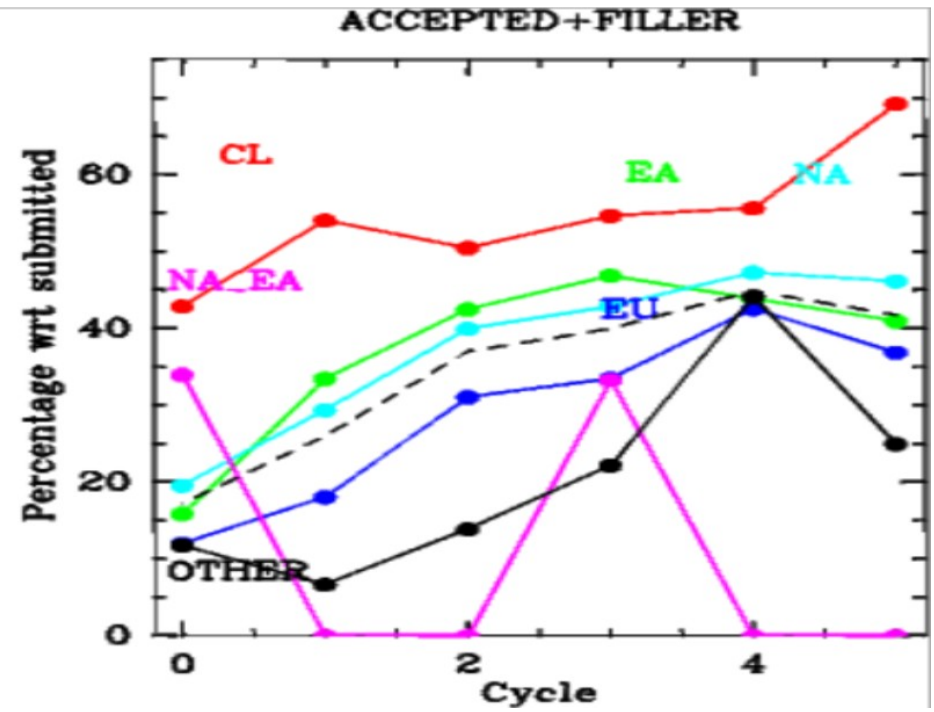
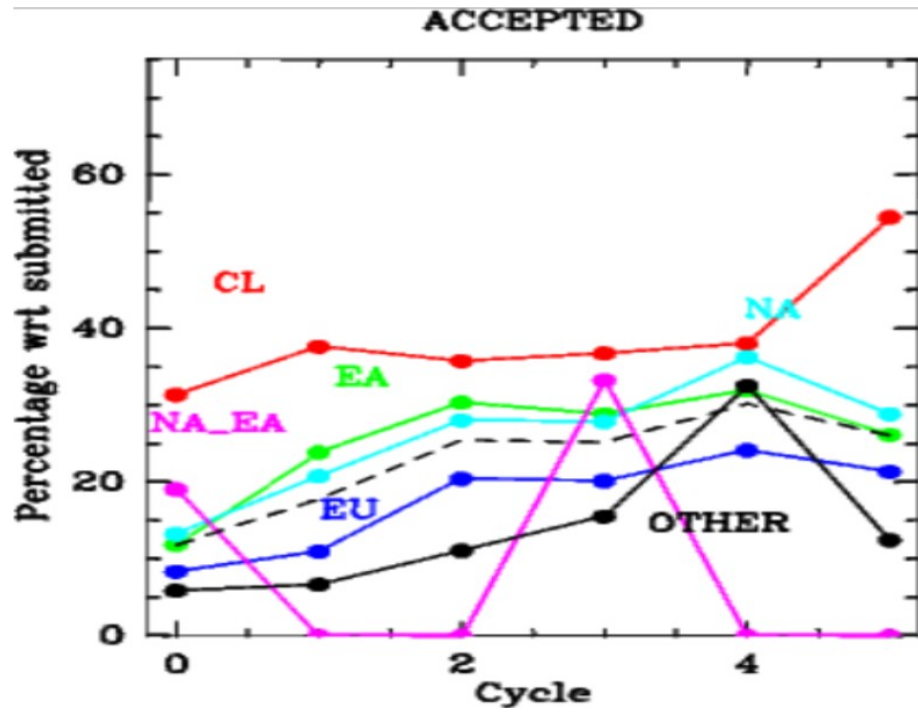
Unique Italian Col



ALMA Italian Success Rate

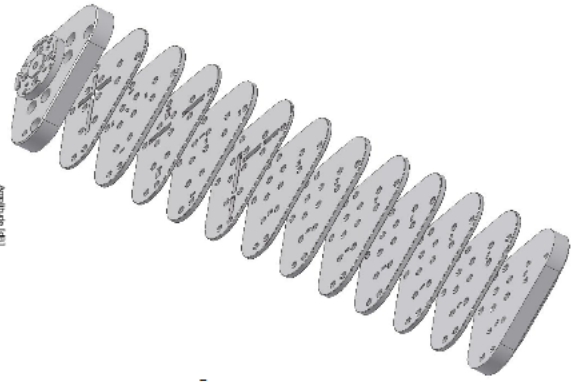
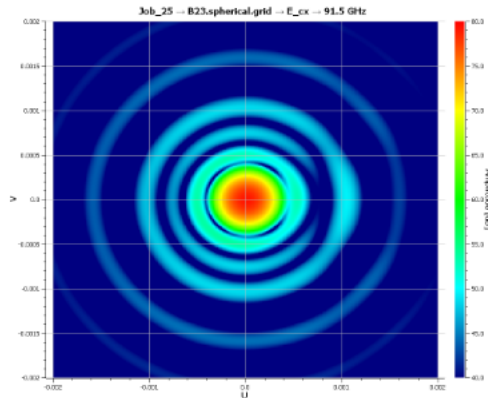
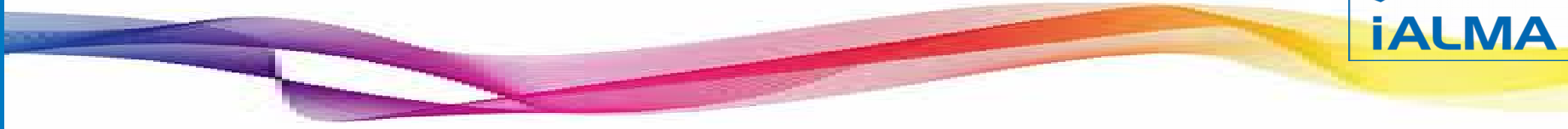


ALMA Italian Success Rate





ESO DEVELOPMENT STUDIES FOR ALMA



- **Band 2+3 passive optical component development:** this work yielded designs for wideband components such as lenses, feed horns, and orthomode transducers (OMTs) covering the entire 67-116 GHz atmospheric window.

Approved in 2013 call
Confirmed in 2016 call

- The **ALMA Re-Imaging development study** will try to define the feasibility, necessary efforts and cost of the re-imaging of the whole ALMA archive for cycles 0-4 using the ALMA Imaging pipeline.

Approved in 2016 call



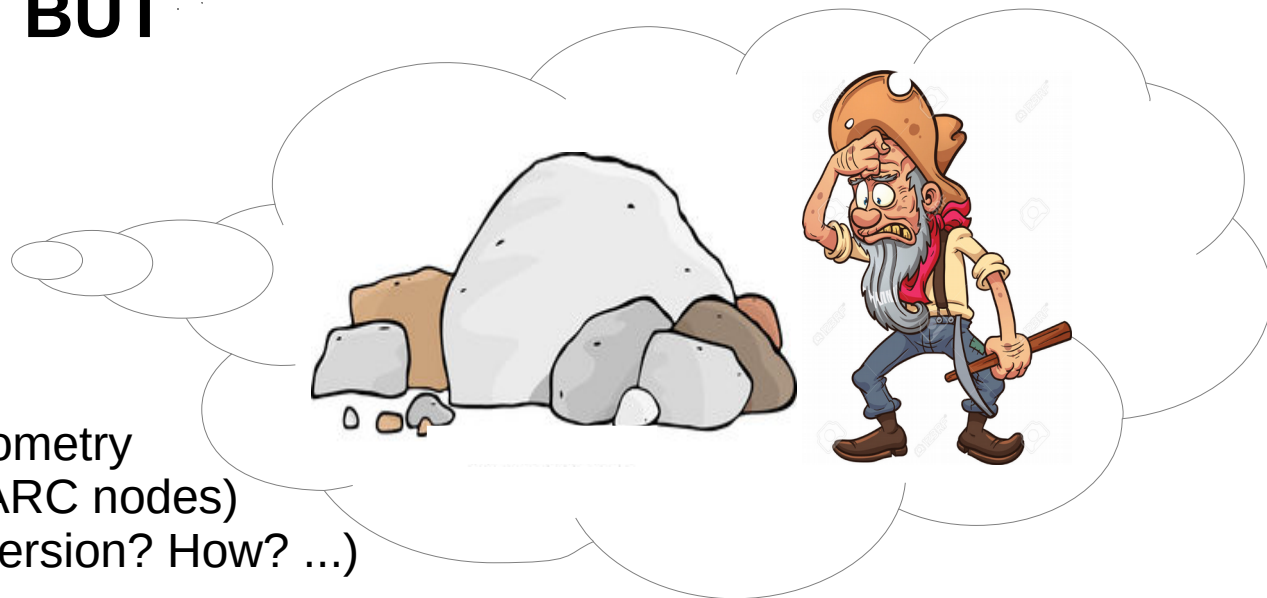
Current status of the Archive... from a miner perspective



- more than 2000 projects observed and archived
- data are already calibrated
- not all the possibilities have been exploited
- archive will keep growing

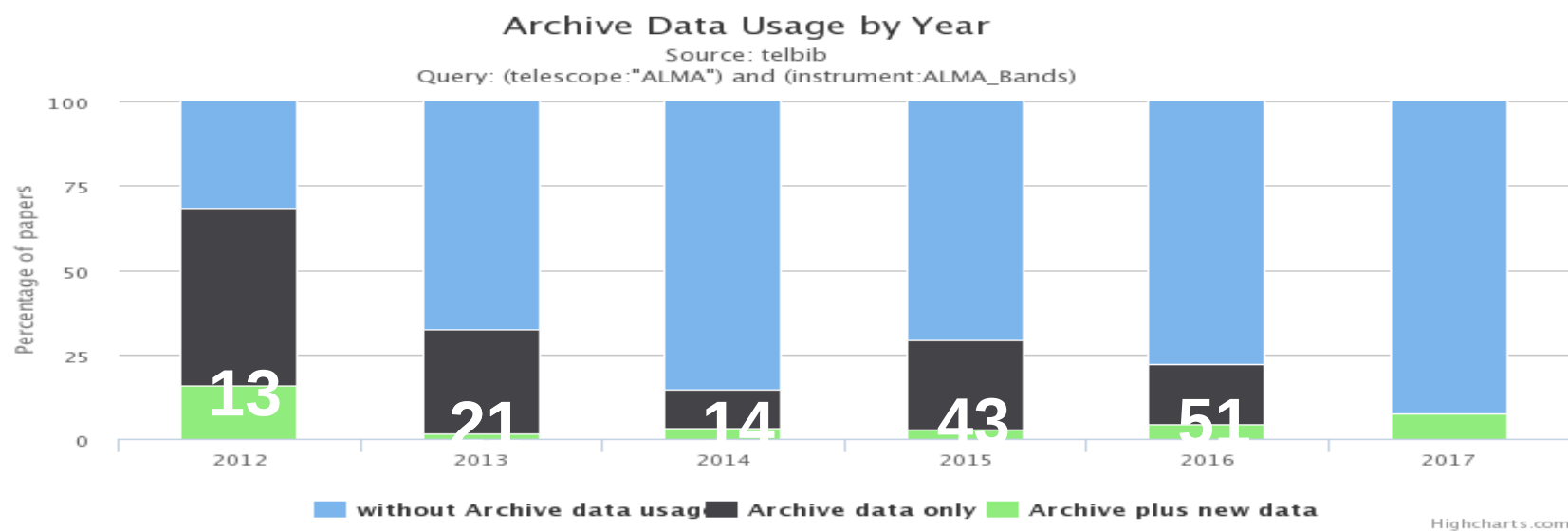
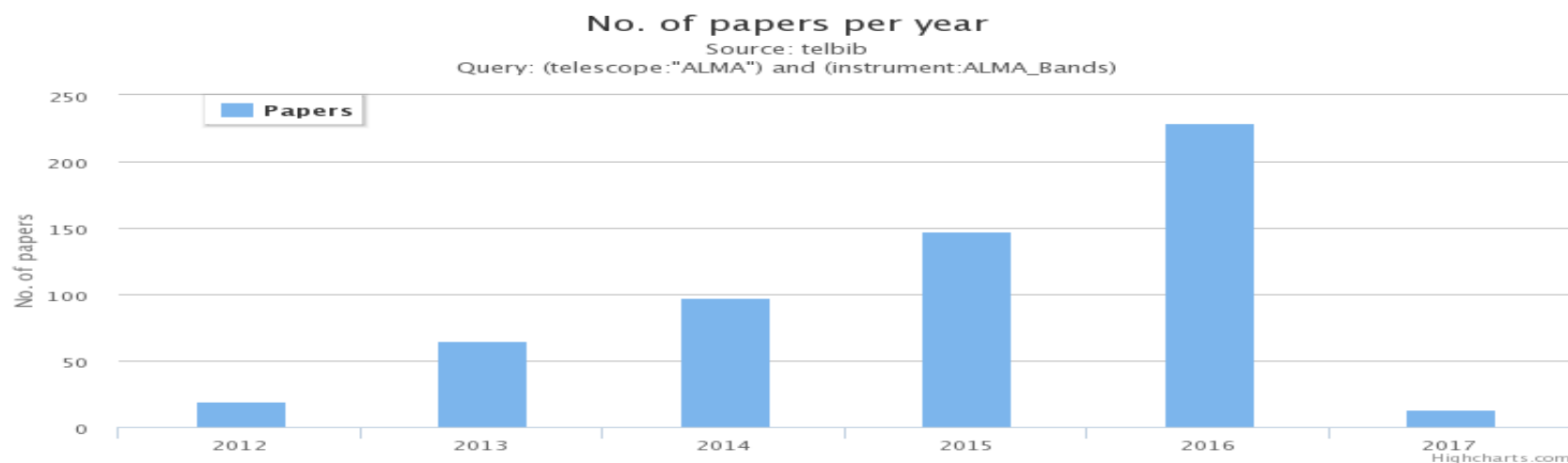
BUT

- dataset are huge
- images available are made for QA2
 - = incomplete
 - = inhomogeneous
 - = not easily comparable
- to understand scripts I need interferometry induction/skill (luckily I have the ARC nodes)
- to run scripts I need CASA (which version? How? ...)



Current status of the Archive... from a miner perspective

...NEVERTHELESS >143/570 papers (up to end 2016)
include archival and SV data



Here comes ARI (ALMA Re-Imaging)



Purpose of re-imaging:

- provide homogeneous products in the form of image
- for all the data in cycles 0-4
- quality of the images will be as defined by the pipeline

ALMA Science Arch

Query Form Results Table

Submit download request

Showing 6 of 6 rows.

Project code	Preview
<input type="checkbox"/> 2011.0.00061.S	preview
<input type="checkbox"/> 2011.0.00061.S	preview
<input type="checkbox"/> 2011.0.00061.S	preview
<input type="checkbox"/> 2011.0.00061.S	preview
<input type="checkbox"/> 2011.0.00061.S	preview
<input type="checkbox"/> 2011.0.00061.S	preview

Filter:

ALMA QA2 ADMIT External

README QA2 report weblog

NGC 1614

Help

continuum peak image spectrum at max. value

moment 0 moment 1 moment 2

Large CARTA FITS PREV VO

SPW 0: 328.32..330.20GHz, 976.56kHz, XX YY

SPW 1: 328.32..330.20GHz, 976.56kHz, XX YY

SPW 3: 328.32..330.20GHz, 976.56kHz, XX YY

SPW 4: 328.32..330.20GHz, 976.56kHz, XX YY

Pub

Q

Q

Q

Q

Q

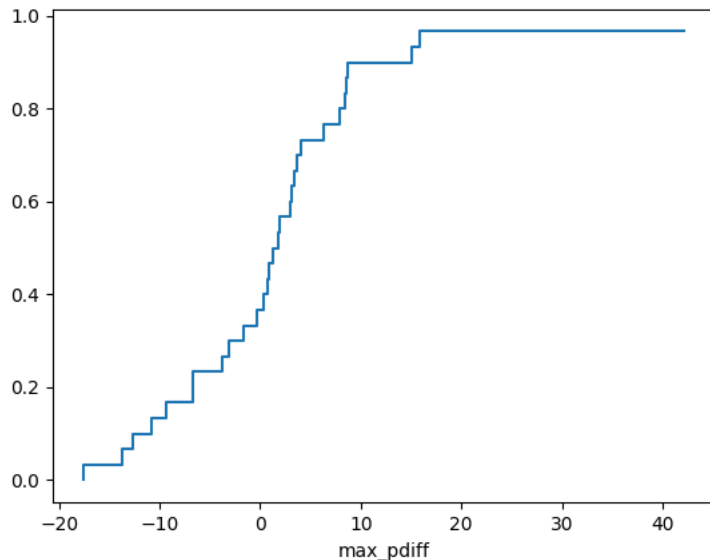
Q

Caveats and rules of the game:

- we do not aim at generating the best science image but only one image representative of the data content and comparable with other from similar projects (or apply VO, CARTA and other tools)

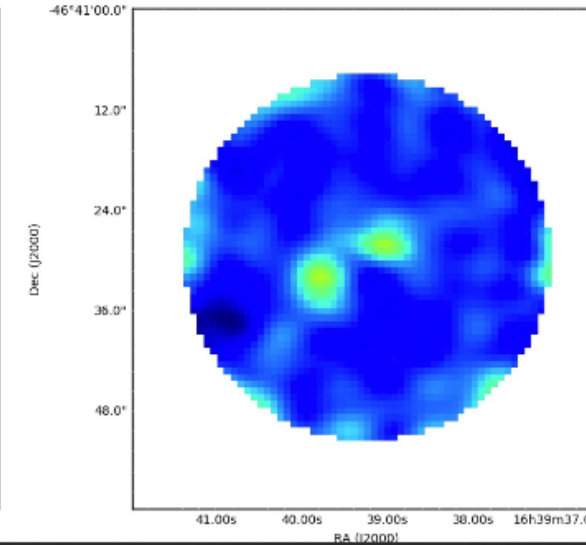
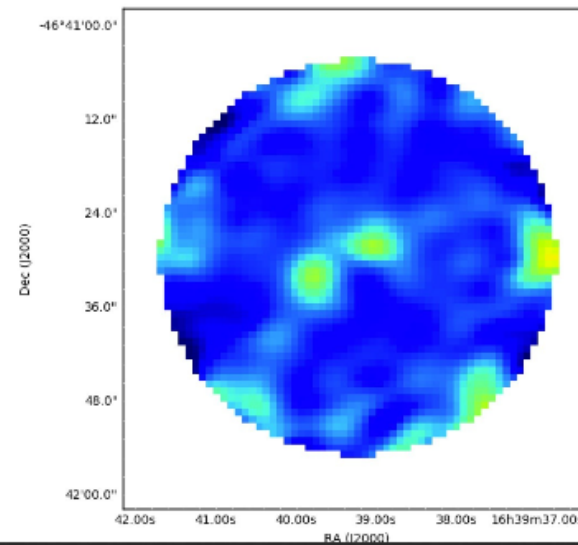
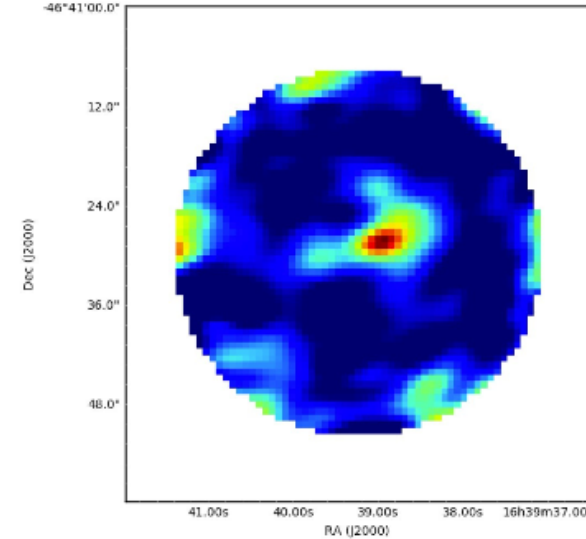
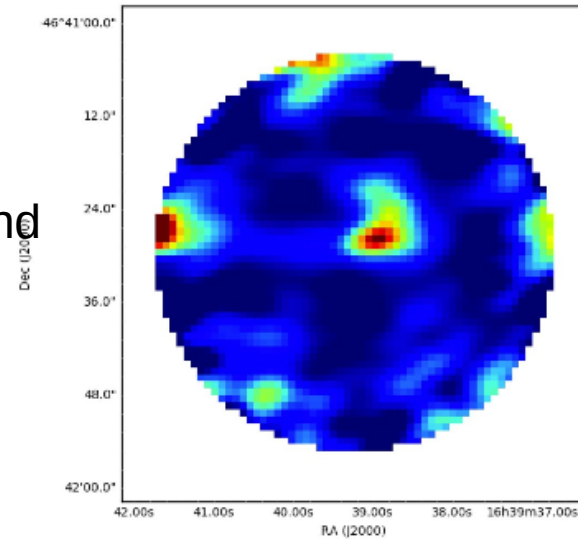
ARI Preliminary results

- Pipeline applicable to all the Cycles data
- Successful in >70% of cases
- Quality comparison between pipeline and manual imaging flux peak within 15% of errors



QA2

Pipeline



Expertises at the ARC and beyond...

- Archive mining
- VLBI
- Array (and single dish) combination
- Polarization calibration

Quarto Workshop sull'Astronomia Millimetrica in Italia

7-10/11 2017 - Istituto di Radioastronomia Bologna, Italy

...towards a SKA Regional Centre

INAF has the leadership of the User Support and Knowledge Distribution Package of the AENEAS 2020 program.

