IMAGING BUSY WEEK

- Rooms: Hooghoudt + visitor room
- Network: access through internet cables
- EVO meeting: LOFAR Imaging Busy Week (password: libw3)
- Sub clusters: sub3, sub7, sub8
- (pizzo)lfe001> showsub

This script shows the sub cluster definitions

sub	lce-nodes	lse-nodes	cexec-lce	cexec-lse	group	contact
sub1	lce001-lce009	lse001-lse003	lce:0-8	lse:0-2	product.	observers
sub2	lce010-lce018	lse004-lse006	lce:9-17	lse:3-5	TBB	ter Veen
sub3	lce019-lce027	lse007-lse009	lce:18-26	lse:6-8	imaging	Swinbank
sub4	lce028-lce036	lse010-lse012	lce:27-35	lse:9-11	pol/EOR	de Bruyn
sub5	lce037-lce045	lse013-lse015	lce:36-44	lse:12-14	pulsar	Hessels
sub6	lce046-lce054	lse016-lse018	lce:45-53	lse:15-17	pulsar	Hessels
sub7	lce055-lce063	lse019-lse021	lce:54-62	lse:18-20	develop.	Romein
sub8	lce064-lce072	lse022-lse024	lce:63-71	lse:21-23	busyweek5	Heald

- This week: use LofIm_release ImagingBW

THE GOAL

With station calibration in place and the new beamserver operational, the data become scientifically interesting

- It is important to assess the quality of the new data and define their potential
- It is important to understand what has to be done on a hardware/software point of view to improve the data quality
- It is ESSENTIAL to give feedbacks to the Radio Observatory reporting what is properly working and what needs to be fixed

AVAILABLE DATA

Source	Observation ID	Band	Δν (MHz)	Duration	Multi beam	Status
3C196	L2010_21604_pizzo	LBA	30-90	10 h	NO	AOF+NDP3
	L2011_22793		15-30	10 h		AOF+NDP3
A-team (Cyg A, Cas A, Vir A, Tau A, Her A)	L2010_22120	LBA	30-90	1.5 h	YES	AOF + NDP3
	L2010_22121					
	L2010_22122					
	L2010_22123					AOF
	L2010_22124					
A2256	L2011_22663	LBA	10-58	6 h	NO	AOF + NDP3
Calibrators (3C147, 3C196, 3C286, 3C295, 3C298, 3C380)	L2010_21732	LBA	30-90	1 m	YES	AOF
	L2010_21738					
	L2010_21739					
	L2010_21740					
	L2010_21741					
	L2010_21742					

AVAILABLE DATA

3C196:

1) ID number: L2010_21604
LBA (30-90 MHz), 64 channels, 25 stations (19 CS + 6 RS), 10 h, 1 second integration

STATUS: processed with RFIconsole, averaged with NDPPP (factor 60 in freq., 5 in time)
LOCATION: /data/scratch/pipeline/L2010_21604_pizzo across the lce nodes (see txt file)

2) ID number: L2011_22793
LBA (10-30 MHz), 64 channels, 24 stations (19 CS + 5 RS), 6 hours, 1 second integration

STATUS: RFIconsole + NDPPP (factor of 6 in fr. And 3 in time)
LOCATION: /data4/L2011_22793 on the lce nodes (see txt file)

AVAILABLE DATA

A-TEAM: Cyg A, Cas A, Vir A, Tau A, Her A

ID numbers: L2010_22120,21,22,23,24
LBA (30-90 MHz), 256 channels, 25 stations (19 CS + 6 RS), 1.5 h each, 1 second integration.

Multi-beam observations. Each observation has a beam on an A-team source at transit and the others at different hour angles. Every beam has been observed at the same frequencies, but it has different SB numbers:

Obsevation ID	Cas A	Cyg A	Vir A	Tau A	Her A
L2010_22120	124-185*	62-123	186-247	---	0-61
L2010_22121	---	62-123	0-61	124-185	186-247
L2010_22122	124-185	62-123	186-247	0-61	---
L2010_22123	0-61	62-123	---	124-185	186-247
L2010_22124	62-123	0-61	124-185	---	186-247

* Sub band number

AVAILABLE DATA

A-TEAM: Cyg A, Cas A, Vir A, Tau A, Her A

ID numbers: L2010_22120,21,22,23,24
LBA (30-90 MHz), 256 channels, 25 stations (19 CS + 6 RS), 1.5 h each, 1 second integration.

STATUS: Processed with RFIconsole. L2010_22120-22 processed also with NDPPP (no average)

LOCATION: averaged data on lce nodes at /data/scratch/pipeline/L2010_22120-22 (see txt file)
raw data (L2010_22123-24) on lse nodes, /data1 disk (see txt file)

AVAILABLE DATA

ABELL 2256:

ID number: L2011_22663
LBA (10-58 MHz), 64 channels, 25 stations (20 CS + 5 RS), 6 h, 1 second integration

STATUS: Processed with RFIconsole and averaged with NDPPP (factor 6 in freq.)
LOCATION: /data/scratch/pipeline/L2011_22663 across the lce nodes (see txt file)

AVAILABLE DATA

3C147, 3C196, 3C286, 3C295, 3C298, 3C380

ID number: L2010_21732,38,39,40,41,42

LBA (30-90 MHz), multi beam, 64 channels, 18 CS, 1 min, 1 second integration

Source	SB number
3C147	0-40
3C196	41-81
3C286	82-122
3C295	123-163
3C298	164-204
3C380	205-245

STATUS: Processed with RFIconsole
LOCATION: /data1/L2010_21732,38-42 on lse nodes (see txt file)

MAIN TASKS FOR THIS WEEK

- Testing NDPPP with ‘rficonsole’ step: do we have good results?
  (Ger van Diepen available to show how it works)

- 3C196: 1) source counts (comparison with VLSS)
  2) Testing the imager from Bas
  3) A-team subtraction (needs to be done for baselines <3 km)
  4) Produce scientific quality images of 3C196
  5) Make image at 10 MHz to look for steep-spectrum sources

- A-Team: 1) A-team subtraction
  2) Make a good model of the sources
  3) Produce scientific quality images

- Abell 2256: 1) Map the diffuse emission from the halo and the relic,
  producing a scientific quality map
  2) Subtraction of off-axis sources to improve the image quality

- Calibrators: test gain transfer from one source to the others

LOFAR IMAGING COOKBOOK

The LOFAR Imaging Cookbook:
Manual data reduction with the imaging pipeline

Written by Timothy Garn (and updated by Roberto Francesco Pizzo,
with contributions from Vishambhar Nath Pandey, Evert Rol, Anna Scaife,
and John Swinbank, on behalf of the LOFAR commissioning teams)*

Version 5.1 + – January 14, 2011

This cookbook describes the process of manually reducing a Measurement Set with the LOFAR imaging pipeline. It is intended to speed up the learning process for future commissioning, by collating various tips, tricks, and solutions in a single place. The LOFAR wiki[1] contains much more information on each stage of data reduction, but might be out of date in many places. The LOFAR forum[2] should also be helpful for commissioning. The contents of this cookbook are an approximation to the correct way of reducing LOFAR data – use with caution.
The softwares that have been designed for LOFAR data reduction are still in development. Sometimes, quicker results might be obtained with other data reduction packages (such as CASA). However, to test and improve the quality of the new software, we strongly encourage the users to follow the proposed way of the cookbook, post results or problems in the LOFAR forum, and talk to the software developers.

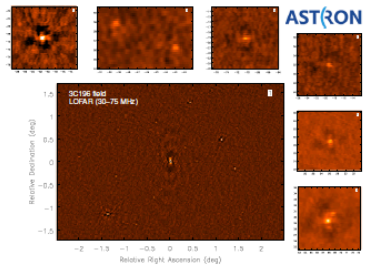

Figure 1: You too can make images like this with LOFAR

*for any suggestions and comments, please contact Roberto Francesco Pizzo, pizzo@astron.nl
[1] http://www.lofar.org/operations/doku.php?id=software:standard_imaging_pipeline
[2] http://usg.lofar.org/forum/

New location:

http://www.astron.nl/radio-observatory/lofar/lofar-imaging-cookbook

THE AVAILABLE SUB CLUSTERS

```
/home/pizzo
(pizzo)lfe001> cexec lce:18-26,54-71 'df -lh | grep data'
************************ lce ************************
--------- lce019 ---------
/dev/sda10            899G  706G  194G  79% /data
--------- lce020 ---------
/dev/sda10            899G  489G  411G  55% /data
--------- lce021 ---------
/dev/sda10            899G  600G  300G  67% /data
--------- lce022 ---------
/dev/sda10            899G  549G  351G  62% /data
--------- lce023 ---------
/dev/sda10            899G  555G  345G  62% /data
--------- lce024 ---------
/dev/sda10            899G  540G  359G  61% /data
--------- lce025 ---------
/dev/sda10            899G  723G  176G  81% /data
--------- lce026 ---------
/dev/sda10            899G  710G  190G  79% /data
--------- lce027 ---------
/dev/sda10            899G  393G  507G  44% /data
--------- lce055 ---------
/dev/sda10            899G  431G  468G  48% /data
--------- lce056 ---------
/dev/sda10            899G  540G  360G  61% /data
--------- lce057 ---------
/dev/sda10            899G  599G  301G  67% /data
--------- lce058 ---------
/dev/sda10            899G  526G  374G  59% /data
--------- lce059 ---------
/dev/sda10            899G  147G  753G  17% /data
--------- lce060 ---------
/dev/sda10            899G  579G  321G  65% /data
--------- lce061 ---------
/dev/sda10            899G  392G  507G  44% /data
--------- lce062 ---------
/dev/sda10            899G  809G   91G  90% /data
--------- lce063 ---------
/dev/sda10            899G  359G  541G  40% /data
--------- lce064 ---------
/dev/sda10            899G  408G  492G  46% /data
--------- lce065 ---------
/dev/sda10            899G  505G  394G  57% /data
--------- lce066 ---------
/dev/sda10            899G  641G  259G  72% /data
--------- lce067 ---------
/dev/sda10            899G  426G  474G  48% /data
--------- lce068 ---------
/dev/sda10            899G  561G  339G  63% /data
--------- lce069 ---------
/dev/sda10            899G  398G  502G  45% /data
--------- lce070 ---------
/dev/sda10            899G  413G  487G  46% /data
--------- lce071 ---------
/dev/sda10            899G  552G  348G  62% /data
--------- lce072 ---------
/dev/sda10            899G  450G  450G  51% /data
```

Available

% used

sub3, sub7, sub8:
lce19-27, lce55-72

Disk space is an issue. Please, take care of deleting your old data before you start

And now…let's define the groups and start working!