ASTRON

Netherlands Institute for Radio Astronomy

Programme:

1. *Array status & Observatory update*
   – M.H.D. van der Wiel

2. *CEP4 data losses and node reboots: current status & progress*
   – R. Bokhorst

3. *Low Frequency Absorption in Cas A*
   – M.A. de Saavedra

4. *LOFAR Observation of the merging Galaxy Cluster ABELL 1914*
   – S. Mandal

Array Status

International LOFAR Telescope (ILT)

- 50 operational stations: 24 CS / 14 RS / 12 IS
+ new station under commissioning in Ireland

- June & July: several afternoons with overheated station cabinets
- Station hardware updates:
  - Extra manpower in summer; heat exchanger replacement ongoing
- ILT maintenance:
  - FR606: some hardware replaced
  - SE607: minor repairs last week
  - IE613: hardware/network commissioning this week
- Oscillating tiles and noisy elements detected and deactivated from several stations
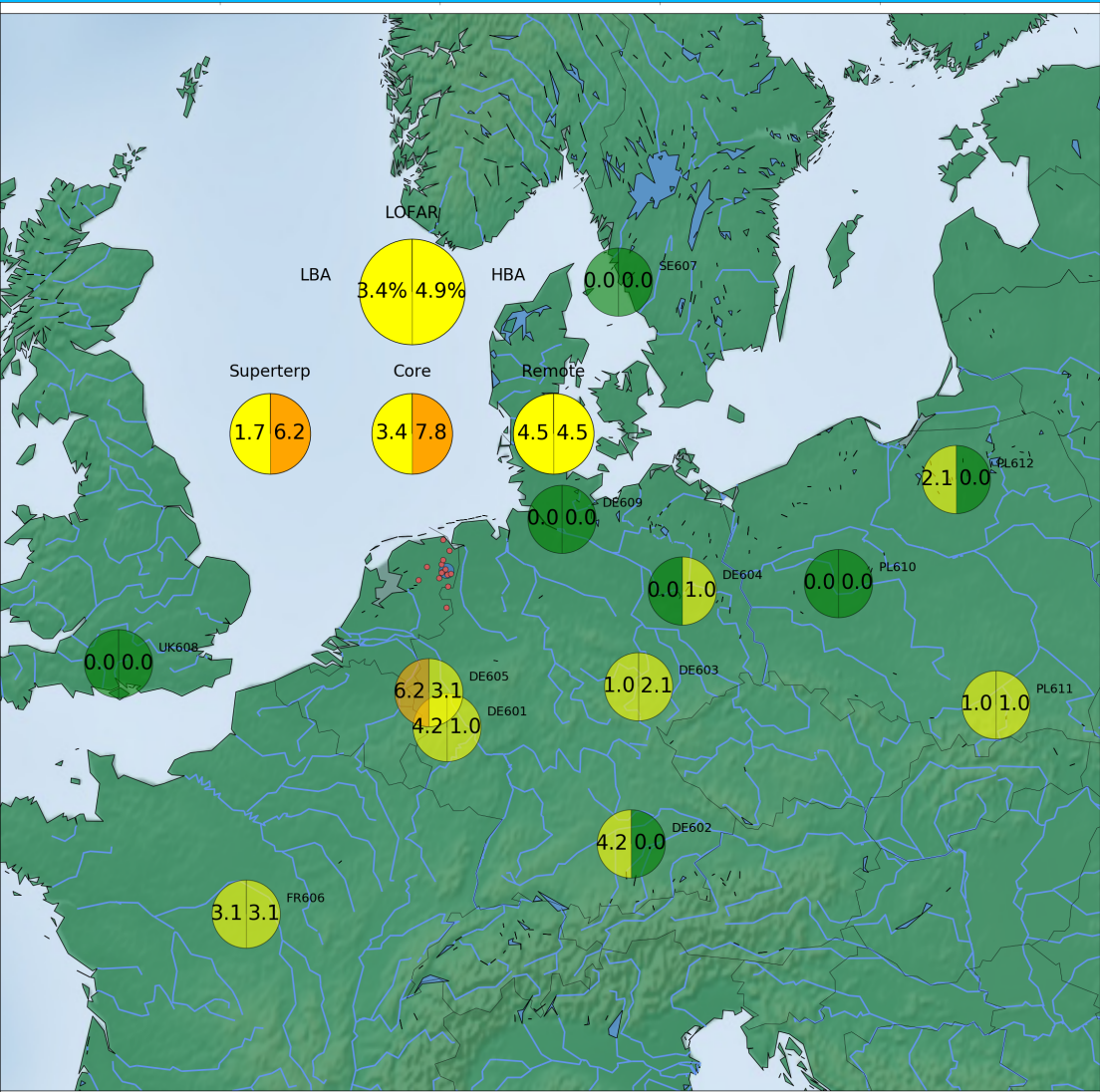
Array Status: IE613 commissioning

- Hardware deployed
- First light LBA antennas last Friday (team picture from I-LOFAR blog)

Overview, including IS

LBA: 3.4%; HBA: 4.9%

see https://proxy.lofar.eu/array_status/

➤ Color coding of non-operational components per stations:

- all operational
- <5% non-operational
- 5–15% non-operational

HBA: CS002, CS004, CS005, CS006, CS017, CS021, CS031, CS101, CS201, CS301, CS501, RS205, RS306, RS307, RS409, RS503

LBA: CS013, CS021, CS032, CS401, CS501, RS205, RS210, RS305, RS306, RS409, DE605

- >15% non-operational

HBA: CS030, CS032, CS302, CS401

News regarding the observing system

- ➢ Reduced efficiency due to continued CEP4 data writing issues and increased frequency of Cobalt node crashes.

    - ▪ Stop Days June 6th and July 4th 2017

    - ▪ Data writing performance tests on CEP4 continue

    - ▪ Increased amount of Cobalt crashes, under active investigation

    - ▪ System software supports direct recording to DRAGNET cluster

    - ▪ System supports part of responsive telescope functionality, for testing purposes

    - ▪ DE601: new GPS unit installed in Dec, old delay compensation removed from Cobalt on June 6.

    - ▪ DE605: HBA antenna positions corrected. Effects on data under investigation.

    - ▪ SE607: high amplitudes in 3rd quartile of subbands in SE607 for 8-bit mode cause found, solution being discussed

- ➢ Station calibration status:

    Overview available at: *http://www.astron.nl/radio-observatory/astronomers/current-status*

    - ▪ Investigation ongoing into quality of LBA Sparse calibration tables

    - ▪ HBA mode 6 (170-230 MHz) calibration tables: updated for RS/IS, ongoing for core.

News regarding Cycle 8 observations

Week 29	UT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Approximate LST		20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
July	17 Mon	DDT8_002 - CygX - HBA -REPET			TBB + tests						all international stations to ILT mode at 9 UT	IoS/TBB/Aartfaac observation to run 0930-1100		dataloss tests - CEP4 reservations				TBB + tests						DDT8_002 - CygX - HBA-REPET	
	18 Tue	DDT8_002 - CygX - HBA -REPET			TBB + tests						LBA+HBA Commissioning - 3C196 -1hr	DDT8_001 J0652 - 20 min HBA DRAGNET	(c) A: LC7_024 - P194+70 & P174+65 - 8hrs HBA - re obs									TBB + tests			
	19 Wed	STATIONTEST			LC8_018 - block2 4x20min - HBA run2		(c) A: LC8_022 - P120+39 & P115+37 - 8hrs HBA - REPET										TBB + tests						DDT8_002 - CygX - HBA - repeat	
	20 Thu	DDT8_002 - CygX - HBA - repeat		TBB + tests	(t) LT5_004 - LOTAAS - 4hrs HBA			TBB + tests	(c) A: LC7_024 - P140+60 & P130+52 - 8hrs HBA - re obs									TBB + tests						DDT8_002 - CygX - LBA	
	21 Fri	DDT8_002 - CygX - LBA		TBB + tests	(t) LT5_004 - LOTAAS - 4hrs HBA			TBB + tests		all international stations to local mode at 9 UT	TBB + tests	DDT8_001 J0652 - 20 min HBA DRAGNET	TBB + tests								(t) LT5_004 - LOTAAS - 4hrs HBA				
	22 Sat	TBB + tests	LC8_029 - J2044 - 15min HBA	TBB + tests									LC8_029 - J1239 - 15min HBA	(t) LT5_004 - LOTAAS - 4hrs HBA				TBB + tests		TBB + tests					
	23 Sun	(t) LT5_004 - LOTAAS - 4hrs HBA		TBB + tests							(t) LT5_004 - LOTAAS - 4hrs HBA				TBB + tests										

➢ Cycle 8 observing program ongoing:

- Increasing impact of CEP4 data losses and Cobalt nodes crashes

- Detailed Cycle 8 schedule available here: *http://www.tiny.cc/LC8*

➢ Changes can be applied on a daily base: in case of questions/issues contact Science Operations & Support at sos@astron.nl and include the proposal code in the subject line

CEP news:

- CEP3

  - cluster currently oversubscribed

  - Upgrade of CEP3 system successful

  - debugging phase post upgrade mostly completed

- CEP4

  - Investigations data loss ongoing in collaboration with DELL. (See contribution by R. Bokhorst.)
    Mitigating actions:

    1. avoid deletion of large amount of data during observations

    2. do not fill up the cluster disk space beyond 70%

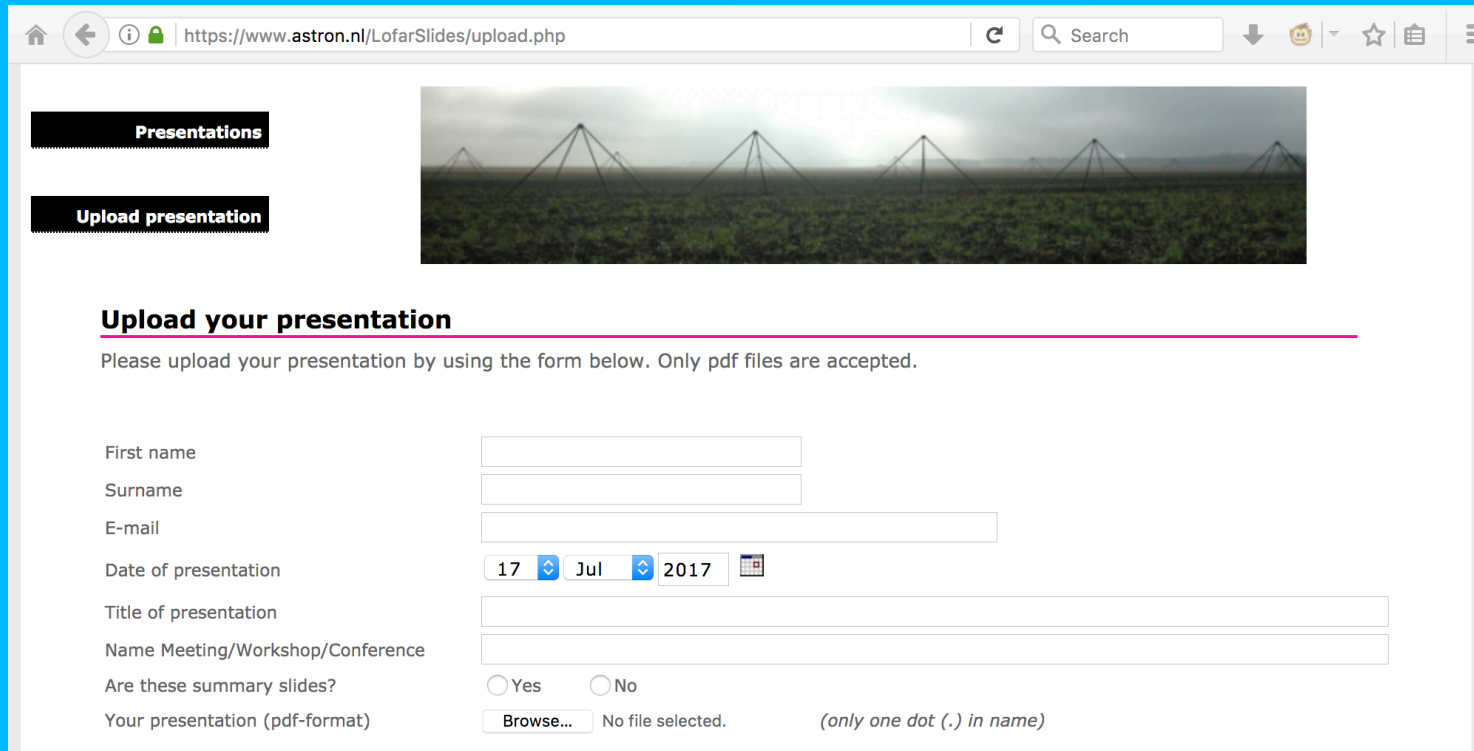   3. Avoid overlap of pipelines and high-data-rate recording [undesirable]

Proposal call for Cycle 9

➢ Call for proposals distributed on July 6th

➢ New as of Cycle 9:

  ➢ Irish station IE613 expected to be available. If science goals depend on this station, state explicitly in justification text and under scheduling constraints

  ➢ Overhead time for multiple pointings (1 minute between consecutive observations) to be included in time request

LOFAR slide repository

➢ RO instated a `LOFAR slide repository'

    ➢ Located at https://www.astron.nl/LofarSlides/

    ➢ Anyone can upload slideshows, to be approved by RO / SOS

    ➢ Purpose: information source for other users, extra exposure for your content

LOFAR related events:

- ➢ 4th LOFAR users meeting took place on June 23rd.
  Feedback from community gathered.

- ➢ Next LSM   :   23 Aug, 2017 (volunteers welcome)

- ➢ Cycle 9 proposal submission deadline: 13 September, 12 UT (noon)

Useful LOFAR links:

➤ Calendar LOFAR activities:

http://astron.nl/radio-observatory/calendar-lofar-activities/calendar-lofar-activities

➤ LOFAR Papers:

http://www.astron.nl/radio-observatory/lofar-science/lofar-papers/lofar-papers

➤ All accepted LOFAR DDT projects list:

http://www.astron.nl/radio-observatory/cycles/accepted-ddt-projects/accepted-ddt-projects

➤ LSM presentations list & users suggestions:

http://www.lofar.org/operations/doku.php?id=public:lsm_new:start

➤ LOFAR news email list:

http://www.astron.nl/radio-observatory/subscribe-lofar-news/subscribe-lofar-News